CRANFIELD UNIVERSITY

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Art-based Methods in Management Education

Cranfield School of Management

PhD
Academic Year: 2010-2014

Supervisor: Donna Ladkin, Kim Turnbull
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This thesis is submitted in partial fulfilment of the requirements for the degree of Ph.D.

Everything on the following pages is built upon the foundation of the sensory impressions from thousand of hours I have spent teaching, learning, watching, and enjoying dance and music; and from an equal amount of hours spent watching sculptures, paintings and installations, in places, such as, Tate, National Gallery, Somerset House (London), Herimitage (Saint Petersburg), and Louvre (Paris); and listening to the evocations and transmissions of spiritual teachers. These sensory impressions are both the foundation of the present work and its ultimate message. They are the tools of perception-action I have spent forty years developing and four years formulating in this work.

Abstract (323 words)

The purpose of this dissertation is to develop explanatory theory for the learning processes facilitated by art-based methods in management education (ABMs). Such theory is important because managerial educators increasingly use ABMs, and without a well-developed theory it may be difficult to realise these methods' full potential.

Current research on ABMs uses theories from other fields but generally sees ABMs as methods for making important information available for reflection, e.g. information about unconscious assumptions, aesthetic experience, or non-propositional or tacit knowledge. This shows that the field is grounded in a *representationalist view of cognition.*

This view of cognition makes it difficult to explain certain themes in the research field, such as, the importance of staying with the senses *without reflecting*, aesthetic agency, and the process of *making*. I therefore asked: What insights can be gained from exploring ABMs, using theories grounded in the *embodied view of cognition*, in particular Conceptual Metaphor Theory (CMT) (Lakoff & Johnson, 1999) and simulation theories (Barsalou, 2008).

For the empirical work, I used an experimental design with 60 managers from Danish companies. All participants selected problems from their work they perceived as important, yet unsolvable. They were randomly divided into three groups: Two groups using different ABMs to address problems and a comparison group where no ABM was used.

The experiment indicated that 1) creating new metaphors for a problem based on different sensory metaphors enabled the participants to *import behaviour* from contexts unrelated to the problematic situation, and 2) focusing on sensory experience enabled participants to remove judgments about self or others. Furthermore, the experiment indicated that learning outcomes reflected participants' experience of the *concrete learning intervention*.

These findings contribute to CMT by suggesting that it is possible to formulate relationships between changes in metaphors and specific learning outcomes. They contribute to ABM by suggesting that experiences that participants have during ABMs are later used as *tools* for structuring other experiences – not merely as *data* for reflection.

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Springborg, C. (2012). Perceptual refinement: Art-based methods in managerial education. *Organizational Aesthetics*, 1(1), 116–137.

Springborg, C. (2010). Leadership as art: Leaders coming to their senses. *Leadership*, 6(3), 243–258.

Conference papers

Springborg, C. (2014). The embodied roots of meaning, trust, and freedom. In *Danish Leadership Academy*. Roskilde University, Denmark

Springborg, C., & Ladkin, D. (2014). Realising the Potential of art-based methods in managerial education. In *Academy of Management Annual Meeting*. Philadalphia.

Springborg, C. (2012). Art-based methods in management education from the symbolic, connectionist, and embodied perspective. In *Art of Management and Organization: York*.

Springborg, C. (2011). Skal manager lære at være kunstnere?: Hvad kan den stigende anvendelse af kunstbaserede metoder i management uddannelse fortælle os om nye krav til ledere i dag? In *Danish Leadership Academy*. Copenhagen Business School, Denmark

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Presentations for academics and practitioners in 2014

- May 13th: Spinnerihallerne (entrepreneuer hub), Vejle, DK
- May 21st morning: Mærsk, Copenhagen, DK
- May 21st afternoon: Copenhagen Business School, Copenhagen, DK
- May 27th: Ressonans, Copenhagen, DK
- May 28th: Danish Pedagogical University, Copenhagen, DK

1. Introduction

The purpose of this dissertation is to develop explanatory theory for the learning processes facilitated by art-based methods in management education (ABMs). Developing such theory is important because it provides practical useful guidelines to facilitators who wish to optimise their use of ABMs in management education. The need to develop a new explanatory theory for the learning processes facilitated by ABMs is evident, in that current research on ABMs describes aspects of the learning facilitated by ABMs, which cannot be adequately explained by the theories currently used in the field.

Art-based methods are a form of constructivist learning interventions characterised by the use art-based media, processes inspired by art creation, and works of art. Today, art-based methods are increasingly used in management education (e.g. Taylor & Ladkin 2009, Darsø 2004, Nissley 2002b, 2008). These methods are researched and practiced in places, such as, IEDC in Slovenia, Centre of Art and Leadership at Copenhagen Business School, the Banff Centre in Canada. Furthermore, a number of special journal issues concerning art and aesthetics have been published over the last 15 years: Organization 3(2) & 14(3), Human Relations 55(7), Journal of Business Strategy 26(5) & 31(4), Journal of Management & Organization 14(5), Consumption, Markets, and Culture 9(2), Leadership 6(3), Journal of Management Development 30(3), Cutter IT Journal 21(7), Management Decision 44(4), and Scandinavian Journal of Management 30(1). Given this increased use of ABMs, it is appropriate to take a critical look at the theoretical explanations currently used to guide practice.

Currently the theories most widely used to explain the learning processes facilitated by ABMs include reflection (Argyris, 1982), critical reflection (Reynolds, 1998), various forms of reflexivity (Grisoni, 2012; Sutherland, 2013), transformative learning (Grabov, 1997; Kerr & Lloyd, 2008; Mezirow, 1991), and experiential learning (Kolb & Kolb, 2008; Kolb, 1984).

However, scholars have made observations that are difficult to adequately explain using these theories. For example, scholars have noted that with regard to ABMs it is important to spend time staying with sensory experience *without* reflecting on it (Seeley & Reason, 2008; Springborg, 2010), that such staying with the sensory experience can generate an aesthetic agency (Springborg & Sutherland, 2014; Sutherland, 2013), and that "the very making of art can foster a, deeper experience of personal presence and, connection" (Taylor & Ladkin, 2009, p. 56). Taylor and Ladkin (2009) refer to the latter as the process of 'making'.

To account for such observations, scholars in the field have drawn on theories such as depth psychology (Barry, 1994), various branches of psychoanalysis (Wicks & Rippin, 2010), sense-making theory (Barry & Meisiek, 2010a), Heron's extended epistemology (Seeley & Reason, 2008), Theory U (Darsø, 2004), art therapy (Barry, 1994; McNiff, 1998), Edgar Schein's version of Kurt Levin's three-step model of organisational change (Taylor, 2008), most of the European philosophy of art (Pierre Guillet de Monthoux, 2004), in particular John Dewey (Bathurst, Sayers, & Monin, 2008), Susanne Langer (Taylor & Ladkin, 2009), and in surprisingly rare cases Rudolf Arnheim (Springborg & Ladkin, 2014). Some scholars have even argued that it is necessary to create a new theory for ABMs as any imported theory will carry too many preconceived ideas to allow us to see what it is we can do with art (Austin & Devin, 2003).

However, regardless of which theory scholars in the field use, they all operate from the underlying assumption that ABMs are methods for making important information available for reflection. Scholars who use theories from depth psychology, psychoanalysis, or art therapy argue that ABMs can make unconscious material available for conscious reflection. Scholars who use Susanne Langer's theory of art or Heron's extended epistemology often argue that art can capture aesthetic aspects of organisational life that language cannot capture, thus making these aspects available for reflection. Others use these theories to argue that art can capture tacit knowledge and make it available for reflection (Antal, 2009; Minocha & Reynolds, 2012; Nissley, 2010; Schyns, Tymon, Kiefer, & Kerschreiter, 2012; Seeley & Reason, 2008; Taylor & Ladkin, 2009).

However, the question of what faculty is used for the reflection itself is never seriously addressed. It is simply assumed that our mind or body has the capacity to reflect on anything we become aware of. This points to an underlying representationalist view of cognition, according to which sensory experience is *data* that individuals can reflect upon.

However, as it is also widely acknowledged in the literature (e.g. Taylor & Ladkin, 2009) that ABMs seem to be able to have profound effects even without reflecting upon the experience produced during such methods, i.e. without actively formulating 'what can be learned from this experience that is relevant to participants' work life' at the end of the learning intervention.

In 2010, I facilitated a workshop at the Experiential Educators in Europe Conference. I called this workshop: Aesthetic Inquiry. I designed a process with the goal of taking the participants through an art-creation process that closely resembled the kind of process I know from my work

as a musician and dancer. In short, I asked the participants to select a phenomenon they wished to know more about. I guided them to describe this phenomenon in terms of physical experiences and then produce a poem and some photographs that could trigger the same or similar sensory experience in them as thinking about the phenomenon did. After approximately one hour the participants presented their works for each other. We did not engage in reflection on what could be learned about the phenomenon from the poetry and photographs. I assumed the learning was complete when the product had been created and that there was no need for any reflection. Many of the participants reported to have been deeply touched by the process. After the workshop four different participants stated that:

- The knowledge I gained was: unexpected, rich and 'untouchable'
- The knowledge I gained is knowledge at 'different levels'. It was a sort of double-loop learning in 1,5 hours.
- It opened a drawer that I would not have been able to open with reasoning, because what I discovered is not logical for me and what I know now.
- The aesthetic inquiry was a way to unlock the unknown

From this workshop and the above quotes, I got the distinct feeling that ABMs had the potential to do much more than provide rich data for the reflection process.

In cognitive science, the representationalist view of cognition has been challenged and throughout the last 25 years empirical studies have produced substantial support for a new radically embodied view of cognition (Barsalou, 2008; Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005; Wilson, 2002). In this dissertation, I propose to use theories based in this embodied view of cognition as a radically different starting point from which to explore ABMs.

I suggest using the neural version of Cognitive Metaphor Theory (Grady, 2007; Lakoff & Johnson, 1999) developed in linguistics and simulation theories, such as, Perceptual Symbol Systems Theory (Barsalou & Wiemer-Hastings, 2005; Barsalou, 1999; Dantzig, Pecher, Zeelenberg, & Barsalou, 2008; Wiemer-Hastings & Xu, 2005) developed in cognitive science. From CMT, I propose using the concepts of primary and complex metaphors. From simulation theories, I propose to use the claims 1) that abstract thinking is grounded in simulations (i.e. reactivations in the sensory-motor cortices) and 2) that the primary function of simulations is supporting interactions with the environment.

I, therefore, ask the question:

> *What insights can be gained from using the theoretical lens of Cognitive Metaphor Theory and simulation theories to explain the learning processes ABMs in management education can facilitate?*

To address this question, I used an experimental design with 60 managers from Danish companies divided into three groups working with self-selected problems they perceive as important, yet unsolvable. 20 participants used poetry, photography, and drawing to create new metaphors for their problem – a process I called Metaphorical Inquiry (MI). 20 participants used poetry, photography, and drawing to explore sensory experience in terms of which they perceived their problem – a process I called Aesthetical Inquiry (AI). 20 participants did nothing after formulating their problem. After one month, all participants were interviewed about their problem.

The experiment indicated that 1) creating new metaphors for a problem based on different sensory metaphors enabled the participants to *import behaviour* from contexts unrelated to the problematic situation and 2) focusing on sensory experience enabled participants to remove judgments about self or others. These findings contribute to CMT by suggesting that specific types of changes in the metaphors for a phenomenon can be related to specific types of changes in perception of and interaction with this phenomenon.

The experiment also indicated that learning outcomes reflected participants' experience of the concrete learning intervention. This contributes to the field of ABMs in management education by suggesting that the experiences participants have when going through a concrete learning intervention is not merely data for reflection, but have the potential to become tools for engaging with experiential data. For example, learning to make metaphors may reveal something new about the situation one is exploring, but it also teaches the tool of making metaphors. Similarly, focusing attention on sensory experiences related to a phenomenon may provide data about these sensations, but it also teaches the tool of focusing on sensory aspects of phenomena. In other words, the form of the ABM learning intervention is part of what is learned. From this perspective, ABMs should be analysed in terms of what experience is enabled by the inclusion of art in the learning intervention.

This thesis begins with a review of the literature on ABMs, situating the research question in the literature (Chapter 2). Next the method used to answer the question is presented and the

philosophical ground this method rests on (Chapter 3). After a short descriptive analysis (Chapter 4), describing the participants and the 60 problems selected by these participants, comes the main conceptual analysis of the interviews (Chapter 5). This begins with a description of the evolvement of the coding template (5.1). The four following sections focus on effects particular to Passing of time (5.2), Interview-procedure (5.3), Metaphorical Inquiry (5.4), and Aesthetical Inquiry (5.5). The final two sections of this analysis chapter deal with the more general relationship between the experience of the concrete learning intervention and the learning outcome (5.6) and with challenging the analysis by exploring alternative explanations (5.7). Chapter 6 contains a brief summary of the findings, and is followed by a Chapter 7 discussing these findings and unfolding the contributions to theory and practice they support. In Chapter 7, I also discuss future research and some ideas that have developed out of the research, which are interesting, but are not sufficiently evidenced by this research. Chapter 8 contains a short summary of the main contributions. Chapter 9 contains a reflection on the research on the four levels suggested by Alvesson and Skölberg (2009), i.e. construction of empirical facts, interpretation, influence of ideology and power, and problems of representation and authority. These reflections are used to formulate the limitations of the research. The thesis finishes with reflections on the Ph.D. process (Chapter 10), Conclusion (Chapter 11), Appendices (Chapter 12), and References (Chapter 13).

Enjoy.

2. Literature review

In this section, I first place ABMs within the broader literature on learning. I argue that ABMs can be seen as constructivist learning interventions in which the construction of new learning is facilitated through evoking aesthetic (in the meaning *sensory*) experience. I then place my study in the literature about ABMs. I choose to focus on individual learning processes in ABMs where participants create objects in art media. I do so because I see unresolved tension between two different views of cognition, inherited from different parts of the literature used by scholars writing about ABMs, and I see this tension most predominantly in relation to these ABMs.

Next, I describe the two views of cognition in question. In the representationalist view of cognition experience created during learning intervention is seen as data, which participants can reflect upon in order to construct improved inner representaitons that can guide their actions as managers. By contrast, in the embodied view of cognition experience is seen as both what is structured *and* what is used for this structuring – i.e. there are no abstract inner representations decoupled from sensory perception.

The two parts of the literature from which the field of art-based methods (ABMs) in management education were born are *management education* (e.g. Alvesson & Willmott, 1996; Argyris & Schön, 1974; Cunliffe, 2004) and *organizational aesthetics* (e.g. Gagliardi, 1999; Linstead & Höpfl, 2000; Strati, 1999).

On one hand, to explain learning processes in ABMs, scholars draw on theories used in the field of *management education* about learning (e.g. reflection, critical reflection, transformative learning, experiential learning), sense-making (e.g. theory U and sense-making theory), design thinking (e.g. prototyping), and psychology (psychoanalysis, depth psychology and – by extension – art therapy). All of this literature, however diverse it is, all share a representationalist view of cognition in which sensory experience is seen as (various kinds) of data the learner can reflect upon.

On the other hand scholars in the field also draw on a number of philosophers of art and education, such as John Dewey and Susanne Langer, used in the field of *organizational aesthetics*. These philosophers can be seen as predecessors for what in recent times, within cognitive science, has come to be known as the embodied view of cognition. According to this view, sensory experience is not merely data to reflect upon, but rather "the very flesh and blood of thinking

itself" (Arnheim, 1969, p. v). In other words, individuals use sensory experience not merely as data to reflect upon. Sensory experience is also the tool used for reflection itself. Individuals do not use abstract inner symbols for reflection. Rather, they use reactivations of sensory experience (I will explain this in depth later).

This unaddressed clash between two views of cognition has problematic consequences for the theory building in ABMs in management education.

First, even though the above-mentioned aesthetic thinkers are often fundamental to the arguments put forward in the literature on ABMs in management education, they are used in a selective way that filters out the embodied view of cognition and some of the their most central claims. This creates a paradox where authors on the one hand argue that aesthetic (sensory) experience is fundamental to the way individuals make sense of the world, and on the other hand still maintain that the function of including art is to make this aesthetic experience available for reflection processes that only depends on sensory experience *as data*.

Second, it is argued that it is important to place sustained awareness on sensory experience *without* reflecting on it and that such 'staying with the senses' (Springborg, 2010) can give rise to a particular kind of agency, which Sutherland (Springborg & Sutherland, 2014; Sutherland, 2013) has dubbed aesthetic agency. Furthermore, the process of art-creation is seen to have profound effects on the creator as a person. Taylor and Ladkin (2009) refer to this as the *process of making*. However, theories of human cognition and meaning making based on the representationalist view seem inadequate in explaining themes such as the importance of staying with the senses, aesthetic agency, and the process of making.

I suggest that this may be remedied by exploring the learning processes facilitated by ABM, using concepts from theories of human cognition and meaning making based firmly in the embodied view of cognition – instead of the theories currently used that are based on the representationalist view. In particular, I suggest using the concepts of primary and complex metaphors taken from Cognitive Metaphor Theory (Grady, 1997; Johnson & Rohrer, 2007; Johnson, 2007; Lakoff & Johnson, 1980, 1999) and the concepts of simulations taken from simulation theories (Barsalou, 1999, 2008; Rohrer, 2007; Wilson, 2002). Using these concepts allows me to explore the learning processes facilitated by ABMs without the limiting effect of using theories based on the representationalist view of cognition.

I therefore propose the research question:

> *What insights can be gained from using the theoretical lens of Cognitive Metaphor Theory and simulation theories to explain the learning processes ABMs in management education can facilitate?*

2.1. Placing the study in the literature on learning theory

This study is fundamentally about learning. Therefore, it is helpful to begin by placing it on a map of learning literature before reviewing more specific bodies of literature.

Literature on learning can be divided into four basic paradigms: Behaviourism, cognitivism, constructivism, and humanism. This is a very rough map. Each category groups theories that are very different. For example, in constructivism we find theories with the common idea that knowledge is actively constructed, but places the construction process in as different locations as the individual (Piaget & Inhelder, 1969), communities of practice (Lave & Wenger, 1991), and society (Vygotsky, 1978). Furthermore, some thinkers are very difficult to place squarely within any one of these paradigms. Finally, other paradigms do exist. For example, phenomenography is a learning paradigm that sees itself as an alternative to all of the above paradigms, in that it attempts to explain learning without reference to the mind-world dualism found most pronounced in cognitivism and constructivism (Marton & Booth, 1997; Watkins, 2000). However, for the purpose of placing ABMs on the map of learning theory, the four categories above will suffice. I will now briefly describe each paradigm and then argue that ABMs can be seen as a particular kind of constructivist learning intervention.

Behaviourism was founded by John B. Watson, Burrhus Frederic Skinner, Ivan Pavlov, and others. Behaviourists see learning as changes in the learner's behaviour caused by positive (reinforcement) and negative (punishment) stimuli from the environment. They believed it was unnecessary to consider mental states or consciousness to explain learning. Noam Chomsky's (1959) criticism of Skinner's work on language is often seen as the beginning of **cognitivism**. Cognitivists hold that it is possible to study mental activities and through this explain how learning (and a number of related phenomena) functions. In cognitivism the learner is seen as an information processor who passively receives information through the input channels of the senses and then processes this information, which leads to a number of outcomes.

Constructivism has its roots in the work of John Dewey, Jean Piaget, Lev Vygotsky, and others. In spite of the pronounced differences between the works of these scholars, they share the view that

learners are not mere information processors but rather information constructors, i.e. learners play an active role in constructing an inner representation of the world. Such constructions can to some degree be shared (and co-constructed) in groups. **Humanism**, founded by Carl Rogers, Abraham Maslow, John Dewey, and others, adds to this view by seeing learning as a self-actualisation project. The purpose of constructing inner representations of the world is ultimately for the learner to fulfill his or her full potential in life and society.

In ABMs learners are generally given a frame within which to learn something about a more or less well-defined phenomenon. For example, managers could be asked to create dolls that represent their view of themselves as leaders, followed by a conversation about their creation (Wicks & Rippin, 2010). It is likely that the managers through this process will learn something relevant to them as leaders, but it is not possible to know exactly what they will learn. Based on the brief introduction to the four learning paradigms above, such interventions can be said to fit the constructivist learning paradigm. ABMs, such as the leadership doll exercise, are generally not well suited for passing on specific, predefined information as in typical cognitivist learning interventions, or for shaping behaviour through well-designed systems of reinforcement and punishment as in behaviourist learning interventions. Neither are ABMs necessarily concerned with learning as an act of self-actualisation as in the humanistic learning paradigm – even if they could be used in this way, and certainly are used in this way in ABMs' close cousin art-therapy.

Thus, since ABMs are a particular kind of constructivist learning intervention, any contribution to our understanding of the learning processes facilitated by ABMs will also be a potential contribution to our understanding of constructivist learning processes in general. I will return to this in the section on contributions. In particular, because ABMs focus on aesthetic experience, it is likely that exploring ABMs will illuminate the role of aesthetic experience in constructivist learning.

Placing ABMs within a constructivist learning paradigm one could easily think that I also place ABMs within the tradition of experiential learning (D. A. Kolb, 1984) as experiential learning is often placed in the constructivist learning paradigm. This is, however, not the case. Kolb claims that experiential learning was founded by John Dewey, Jean Piaget and Kurt Lewin and supported by the work of William James, Carl Jung, Carl Rogers, Paulo Freire, and others (A. Y. Kolb & Kolb, 2008) . Kolb has been widely criticised for misrepresenting these thinkers work in his effort to make them fit together in one coherent model of learning disregarding conflicts in these theories'

philosophical bases (e.g. Miettinen, 2000). As mentioned, I see a similar (although less grave) problem in the literature on ABMs, in that scholars here are trying to match theories from art philosophers based on an embodied view of cognition with learning theories – including Kolb's theories of experiential learning – based on a representational view of cognition. In both cases, joining together theories with different philosophical bases makes it problematic to determine the exact role of *experience* in the construction process called learning. Kolb seems to decide on experience playing the role of data (concrete experience as he calls it) produced through active experimentation feeding into a reflection process, consisting of reflective observation and abstract conceptualisation. This shows that Kolb holds a representationalist view of cognition and as I see this very view of cognition as a hindrance to understanding ABMs, I do not place ABMs within the field of experiential learning.

2.2. Placing the study in the literature on art-based methods in management education

I now give an overview of what has been done in the field of ABMs in management education. I do this to place the present study in the field and to offer concrete references to the literature I see as core to the field.

Scholars in the field have explored ABMs in management education with focus on art in general (Adler, 2012; Barbera, 2009; Barry & Meisiek, 2010a, 2010b; Barry, 1994; Berthoin Antal, 2012; Chia, 1996; Cowan, 2007; P. Guillet de Monthoux, Gustafsson, & Sjostrand, 2007; Ibbotson & Darso, 2008; Irgens, 2014; Kerr & Lloyd, 2008; Kupp, Reckhenrich, & Anderson, 2012; Lloyd, 2011; Mack, 2012, 2013; Marques, 2013; Stefan Meisiek & Barry, 2014a, 2014b; Stefan Meisiek & Hatch, 2008; Minocha & Reynolds, 2012; Mockler, 2002; Nissley, 2002; Reason, 2007; Romanowska et al., 2011; Romanowska, Larsson, & Theorell, 2013; Schein, 2001; Springborg & Ladkin, 2014; Springborg, 2010, 2012a; Taylor & Ladkin, 2009; Taylor, 2012; Tung, 2006; Woodward & Funk, 2010) and in relation to specific art-forms, such as, poetry (Brown, 2006; Darmer & Grisoni, 2011; Darmer, 2006; Grisham, 2006; Grisoni & Kirk, 2006; Grisoni, 2012; Hilberry, 2012; Hiley, 2006; Morgan, Lange, & Buswick, 2010), dance (Bozic & Olsson, 2013; Peterson & Williams, 2004; Springborg & Sutherland, 2014), theatre (Austin & Devin, 2003; Beirne & Knight, 2007; Buswick, 2005; Gibb, 2004; S. Meisiek & Barry, 2007; Taylor & Carboni, 2008; Taylor, 2008), story-telling (Bathurst et al., 2008; Czarniawska-Joerges & Guillet de Monthoux, 1994; Gabriel & Connell, 2010; Hansen, Barry, Boje, & Hatch, 2007; Taylor, Fisher, &

Dufresne, 2002), choral conduction (Springborg & Sutherland, 2014; Sutherland, 2013), and movies (Champoux, 1999, 2012; Wood, 2012).

Scholars in the field work with four different units of analysis (Springborg, 2012b).

1. Mapping the *field* of art-based methods in management education (Taylor & Ladkin, 2009) and in the broader context of organisations (Darsø, 2004; Schiuma, 2009, 2011)
2. Documenting and describing the *outcomes* of ABMs (e.g. Romanowska et al., 2013)
3. Describing individual *methods* (e.g. Bathurst et al., 2008; Cowan, 2007; Wicks & Rippin, 2010)
4. Analysing the *learning processes* facilitated by ABMs either by using theoretical frameworks imported from other fields, (e.g. Bathurst et al., 2008; Hansen et al., 2007; Kerr & Lloyd, 2008; Wicks & Rippin, 2010), or by generating new theoretical frameworks specifically for describing ABMs (e.g. Austin & Devin, 2003; Kerr, 2006).

Most publications deal with combinations of these units of analysis, e.g., both describing a method and analysing the learning process facilitated.

In this study, I focus on individual learning processes (unit of analysis number four) in ABMs where participants themselves work with art-based media. I choose this focus because (as I will relate in the following) I am critical towards the representationalist view of cognition that seems to be part of most of the current literature. I see the use of this view of cognition as most problematic when exploring learning interventions where participants create objects in art-based media themselves. In other words, I focus on individual learning processes in ABMs, where participants themselves work with art-based media because these are the kind of ABMs where I see the biggest need for a revision of the theory currently used.

2.3. The representationalist and the embodied view of cognition in cognitive science

Before looking more closely at the literature on ABMs in management education, I will briefly define the difference between the representationalist and the embodied view of cognition since this is central to my following argument. A more thorough review of the embodied view follows in section 2.7.

The representationalist view of cognition was developed during the cognitive revolution in the mid 1950's. It emerged partly as a reaction against behaviourism's rejection of cognition as a possible subject for scientific exploration. The invention of computers and developments in information theory had a great impact on the formation of the field of cognitive science. Thus, a

view of cognition was formed in which sensory experience was seen as data that was received through the senses and later processed in a 'central processing unit' where this data was translated into abstract, language-like symbols that work as *representations* of the sensory data. Similarly, the motor systems were seen as nothing more than output channels.

Since the 1980's a different view of cognition has emerged in cognitive science, the embodied view of cognition (Varela, Thompson, & Rosch, 1991). This view has its roots in and is developed in many different fields, such as, phenomenology (Merleau-Ponty, 1964), linguistics (Lakoff & Johnson, 1980, 1999; Lakoff & Nuñez, 1999), artificial intelligence and robotics (Brooks, 1991), American pragmatism (Dewey, 1934; Johnson, 2007), cognitive psychology (Piaget & Inhelder, 1969), neuroscience (Barsalou, 1999; Damasio, 1994, 2000). This view is distinct from the representationalist view in that it rejects the idea of cognition being grounded in abstract symbols, standing in for sensory experience. Instead the embodied view claims that cognitive processes are grounded in reactivations in the sensory and motor systems in the brain (the so-called simulations). Thus, sensory experience (understood as activation of the neurons in the sensory and motor cortices in the brain) is not just data feeding abstract cognitive processes, but also the tool used in cognitive processes.

In the following sections, I show how sensory data is consistently seen as data in the literature on ABMs in management education. This reveals the underlying representationalist view embedded in the literature on ABMs. I then draw forth some of the problems this creates. Following, I review the theory and empirical research supporting the embodied view of cognition and suggest how central concepts from Cognitive Metaphor Theory and simulation theories can be used to explore ABMs in management education without involving theories based on the representationalist view.

2.4. Experience as data for reflection – management learning literature

In this section, I review the main models of learning processes that scholars have used to explain how ABMs in management education function. I argue that all of these hold the basic assumption that experience produced through art-creation is *data*, and that ABMs gain their relevance through their ability to elicit data that other methods cannot. In other words, it is typically argued that ABMs' main benefit is that they broaden the data that is made available for managers' reflection – including unconscious material (Barry, 1994; Wicks & Rippin, 2010), power relations embedded in management practice (Beirne & Knight, 2007), tacit knowledge (Berthoin Antal,

2009; Minocha & Reynolds, 2012; Nissley, 2010; Schyns et al., 2012; Taylor & Ladkin, 2009), presentational knowledge (Seeley & Reason, 2008), and aesthetic aspects of organisational life (Warren, 2002). As mentioned, seeing experience as data we can reflect upon corresponds to a representationalist view of cognition.

Below, I have created a map of the literature and included a number of illustrative references. In the outer circle, I have placed references from other fields referenced by authors in the field of ABMs in management education. In the middle circle, I have placed references from organisational theory or management learning in general. In the inner circle, I have placed references to publications on ABMs in management education. Each slice of the map represents different areas of theory. On the right side I have placed the theories, which are based more in the representationalist view of cognition and on the left side, are those based more in the embodied view of cognition. Finally, I have placed a pin in the area I explore in this thesis.

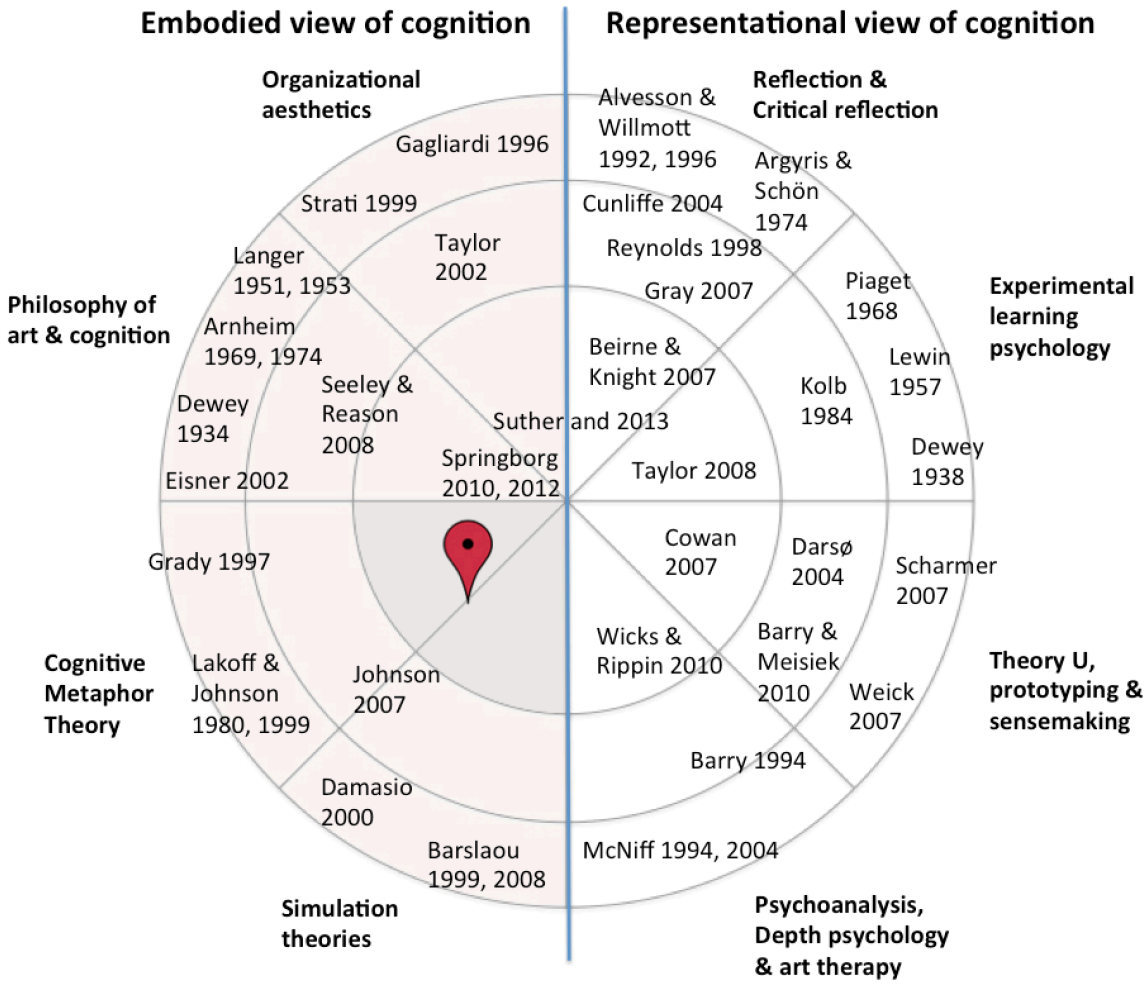


Figure 1: Literature map

In the following, I show how the main theories used in literature on ABMs in management education are used with a representationalist view of cognition.

Reflection and double-loop learning: Scholars engaged with ABMs in management education have drawn on theory developed within the broader field of management education. In the 70's Argyris and Schön (Argyris & Schön, 1974; Argyris, 1977; Schön, 1975) developed their concepts of theories-in-practice and double-loop learning, drawing on Bateson's concept of deutero learning (Schön, 1975). Argyris and Schön proposed that it was important for managers to openly and critically examine their experience in order to discover discrepancies between what they think they were doing (espoused theories) and what they actually were doing (theories-in-action). Through reflecting on concrete experience, managers were able to discover the assumptions they operated from (governing variables) and test whether these were valid in their current organisational context. They called this type of learning double-loop learning and contrasted it with single-loop learning. The latter was a trial-and-error type learning, where various actions were evaluated against their ability to bring about a desired goal, but where the underlying assumptions, which e.g. made the goal desirable, were not questioned (or even made conscious). If we see ABMs as means of facilitating double-loop learning through making the assumptions embedded in our theories-in-action, then we relate to the experience created during ABMs as *data* for reflection.

Critical reflection: The goal of engaging in double-loop learning is normally taken to be the financial success (or merely survival) of the organisation. However, drawing on Critical Theory, scholars established the field of critical management studies, in which reflection had the emancipatory purpose of revealing power relations and oppressive ideologies embedded in management theory and practice (Alvesson & Willmott, 1992, 1996; Gray, 2007; Reynolds, 1998). The emancipatory agenda of critical management studies matches the agenda in Paulo Freire's pedagogy of the oppressed (Freire, 2005) and Augosto Boal's practical application of Freire's theories in what has come to be known as theatre of the oppressed (Boal, 1985) or in more recent times as forum theatre. From this perspective, ABMs can also be seen as a means for facilitating critical reflection in management education (Beirne & Knight, 2007). However, when seeing critical reflection as the learning process facilitated by ABMs, one still holds the assumption that the experience created through ABMs is *data*, namely, data about power relations and oppressive ideology made visible through ABMs.

Transformational learning: Jack Mezirow's theory of transformational learning (Kitchenham, 2008; Mezirow, 1990, 1995) has also been used to explain the learning ABMs may facilitate in management education (e.g. Kerr & Lloyd, 2008). In essence, Mezirow combines some of the same roots as critical reflection (Freire's concept of conscientisation and Habermass' emancipatory learning) with Kuhn's concept of paradigm shifts (Kitchenham, 2008). This produces a description of the kind of deep changes in meaning schemes or meaning perspectives a learner may experience as a result of reflection and critical reflection. Transformational learning is a kind of personal paradigm shift, which may be initiated by encountering a disorienting dilemma. Thus, transformational learning focuses on how deep changes in our habitual cognitive processes can be triggered by reflecting on a particular kind of experience, the disorienting dilemma. The theory has later been expanded to include intuition, creativity, and emotions as important factors in the reflection process that brings about transformational learning (Grabov, 1997). However, even if the experience of the distorting dilemma is seen as something that may force us to change habitual cognitive processes, e.g. our meaning schemes and perspectives, the experience does so merely by being *data* we can neither ignore, nor assimilate into our current meaning schemes and perspectives. In short, ABMs are seen as methods for creating disturbing data.

Overcoming aesthetic muteness: When ABMs are used to facilitate critical reflection, the goal is to give ear to voices that are marginalised due to the power relations in the organisation. However, another kind of 'marginalised voice' is the voice of the aesthetic or sensory aspects of (organisational) life (Gagliardi, 1999; Linstead & Höpfl, 2000; Strati, 2007). This marginalisation is noticeable in organisations as a pronounced inability among employees to speak about aesthetic/sensory aspects of what they experience (Taylor, 2002). The marginalisation of this voice has been claimed to go as far back as Plato's claim that art appeals to the lowest part of the soul (Eisner, 2002). Furthermore, the use of discursive language to represent experience has been identified as part of the reason for this marginalisation of the aesthetic experience. Langer (1951, 1953) claims that various art forms (aesthetic forms) are media better suited for representing aesthetic experience than language (propositional, discursive forms). This is due to the ways the properties of the medium inevitably will systematically distort the experience it is used to represent. Thus, ABMs have also been seen as providing ways of making aesthetic experience available for reflection. In this view, again, is found the assumption that the

experience brought through ABMs is *data* for reflection – this time data about aesthetic experience.

Reflexivity: Just like aesthetic forms (works of art) are better suited than language to represent aesthetic experience, aesthetic forms also have the ability to represent complex and incongruent experience (Langer, 1951). Scholars have recognised that managers increasingly have to deal with complex and incongruent experiences. The ability to reflect on such experiences, without simplifying it, has been called reflexivity (Cunliffe, 2004). Again, ABMs have been seen as methods for facilitating reflexivity in management education (Sutherland, 2013). And again, this view assumes that the experience created in ABMs is *data* for reflection – this time data that preserves the complexity and incongruence of the situation managers wish to reflect upon.

Psychoanalysis and depth psychology: Scholars have argued that "art making enables us to draw upon, and subsequently reflect on, a deep well of 'unconscious stuff'" (Taylor & Ladkin, 2009, p. 58). An idea that artists themselves have also promoted – most famously the surrealists (Baker & Baker, 2012). The "unconscious stuff" Taylor and Ladkin refer to may be unexamined assumptions the individual (Johnston & Kortens, 2010; Springborg & Sutherland, 2014) or even the organisation operates from (Barry, 1994), self images (Wicks & Rippin, 2010), or disturbing aspects of culture (Schein, 2001). To support the claim that production of objects in art-based media can make unconscious material available for reflection, scholars sometimes refer to art-therapy, psychoanalysis, and depth psychology (Barry, 1994; Wicks & Rippin, 2010). "Unconscious stuff" also sometimes is used to refer to tacit knowledge (Polanyi, 1974) – even if this is problematic – and unconscious skills (Taylor & Ladkin, 2009). Whether the unconscious stuff is considered disturbing or hidden treasures of knowledge and skills, when seeing ABMs as means of therapeutic uncovering of unconscious material, one relates to the experience created during ABMs as *data* for reflection.

Experiential learning: Even though no one in the field engaged deeply with Kolb's learning cycle, the main idea that experience can be transformed into knowledge through a process of reflection and testing (A. Y. Kolb & Kolb, 2008; D. A. Kolb, 1984) is, as shown above, very persistent in that experience is consistently treated as data to be reflected upon.

From the above it is clear that even if scholars working with ABMs in management education often speak out against the dominance of rationalistic, intellectual, and propositional forms of knowing there is still a commitment to a representationalist view of cognition in which

experience is treated as data that can be transformed through reflection. The question of what faculty is used for the reflection itself is never seriously addressed. I will return to this later.

2.5. Partial use of thinkers on art, cognition, and education

The other major body of literature that scholars in the field of ABMs in management education draw from is philosophy of art and cognition. In contrast to the literature on management learning, this body of literature is based on the embodied view of cognition. Or to be more precise, many of the writers used can be seen as antecedents to what today is called the embodied view of cognition. In this section, I argue that the theories of art and cognition are used in a partial manner and that core claims about the embodied nature of cognition – including reflection – are mainly ignored.

Art and cognition is not a coherent field of research, but rather a collection of single authors with a passion for this subject (Arnheim, 1969; Dewey, 1934; Eisner, 2002; Johnson, 2007; Langer, 1951, 1953). Common for these thinkers is that they see the experience created through art as far more than *data* we can reflect upon. Rather, they see such aesthetic experience as the *substance* our thinking is made out of. For example, Arnheim claims that "perceptual and pictorial shapes are not only translations of thought products but the very flesh and blood of thinking itself" (Arnheim, 1969, p. v). Langer (1953) claims that art creation is the creation of a new concept by creating a symbol that embodies this concept. Eisner (Eisner, 2002, 2009) claims that art is essential for developing capacities for imagination and discovery. Johnson (2007), following Dewey, suggests that art creation is an example of meaning making. It is interesting to notice that, even though all of the above mentioned thinkers are often cited in the literature on ABMs in management education, these core claims are not cited. Scholars in the field of ABMs in management education do not generally engage with the view that the kind of aesthetic experience that can be created through engaging with art is not primarily something we can reflect upon, but *the very thing we use to reflect with*. I will illustrate this omission of the core claims of the above-mentioned thinkers by going through how these authors are typically used.

Rudolf Arnheim: Johnston and Kortens (2010) mention Arnheim, but only to say that our senses play tricks on us, e.g. when we infer the brick wall from seeing a few lines on a page, and that artists "work with and explore such perceptual shorthand when making art" (Johnston & Kortens, 2010, p. 64). Arnheim's claim that "perceptual and pictorial shapes are not only translation of thought products but the very flesh and blood of thinking itself" (Arnheim, 1969, p.

134) is not used by anyone in the field of ABMs in management education. In fact, in spite of Arnheim being a central figure in the psychology of art, he is rarely cited in this literature.

Susanne Langer: Two of Langer's claims are referred to frequently in the literature on ABMs in manager education. 1) That art (aesthetic/presentational forms) uses media through which one can represent tacit, embodied, and presentational knowing, which cannot be represented through media such as language (discursive/propositional forms) (Seeley & Reason, 2008; Taylor & Hansen, 2005; Taylor, 2008). 2) That art objectifies our experience and makes it available for contemplation and understanding (Kerr, 2010; Taylor & Ladkin, 2009; Taylor, 2008). However, Langer's central claim, that what is created in the act of art creation is a concept, is not used. In other words, only the claims consistent with viewing experience generated through ABMs as data we can reflect on, are cited in the literature on ABMs in management education.

John Dewey: Wicks and Rippin use Dewey to argue that as art is grounded in experience, they can assume a "non-aggrandising perspective on 'leadership as art'" (Wicks & Rippin, 2010, p. 259). However, they use psychoanalytic perspectives, such as Julia Kristeva's, to engage with the learning process the participants go through. Bathurst, Sayers & Monin (2008) use Dewey's notion that art is created through compression and expression of experience. However, they seem to understand this as a process of aggregating or somehow preparing data gathered through participant observation for reflection, not a process through which experience is turned into a tool for reflection as the embodied view of cognition would propose. Sutherland (2013) mentions Dewey to argue that experiential ways of knowing are highlighted in aesthetic experience, but beyond this he does not mention Dewey. Mack (2012, 2013) mentions Dewey, but only to link art and experience. Barbera (2009) use Dewey to link aesthetic experience to ethics.

Taylor and Hansen (2005, p. 1213) suggest that aesthetic knowing is the ground for intellectual knowing. Furthermore, they write that "Dewey (1958) said art's purpose was to achieve a more satisfying experience, one that invigorates us and aids our achievement in whatever ends we pursue" (Taylor & Hansen, 2005, p. 1224). They continue by paraphrasing Schusterman: "aesthetic experiences are also constantly spilling over and being integrated into other activities, enhancing and deepening them (Shusterman 2001)". This does point to aesthetic experience as more than data for reflection. However, they never become explicit about *how* aesthetic knowing

is the ground for intellectual knowing, *how* it invigorates and aids other achievements, or *how* it spills over and enhances and deepens other activities.

Elliot Eisner: Eisner's main project is identifying what education can learn from the arts. He often describes this as a set of skills. However, he also frequently calls it *lessons* or "forms of thinking the arts evoke" (Eisner, 2003, p. 373). Eisner's describes a handful of these forms of thinking. For example, "not all problems have a single answer… the form of a thing is part of its content… having fixed objectives and pursuing clear-cut methods for achieving them are not always the most rational ways of dealing with the world" (Eisner, 1992, p. 594) , and that art does not only enable expression, but also enables discovery. Eisner sees these forms of thinking as something that individuals can attain through repeatedly experiencing the process of art creation – not from merely having these forms of thinking described as ideas. In assuming that these forms of thinking are rooted in the experience of engaging with art – rather than in abstract symbols representing these forms of thinking – Eisner is agreeing with the embodied view of cognition also found in Arnheim, Langer, and Dewey – all of which Eisner frequently quotes.

In the literature on ABMs in management education, Eisner is used to support the legitimacy of using art in management education. For example, Grisoni (2012) and Kerr (2006) both simply refer to Eisner's general suggestion that art plays an important role in the development of human understanding as a way of justifying their explorations of the use of art in management education. Romanowska et. al. (2011) more specifically refer to Eisner's suggestion that art may improve education in creating "a greater focus on valuing than measuring, on surprise than on control, on distinctions than on standard and on the imaginative/metaphorical than on the factual/literal" (Romanowska et al., 2011, p. 79). Dahlman (2007) frames her work as trying to answer Eisner's request for linking experience in art with academic achievement. When Eisner is used in this way, the authors are not engaging deeply with his central project and the embodied view of cognition embedded in this project.

Eisner is also used for arguing that art-based interventions enhance reflection. For example, Antal & Strauß (2014) use Eisner to support Meisiek & Hatch's (2008) claim that art is particularly useful to evoking reflections on organisational identity. Similarly, Katz-Buonincontro and Phillips (2011, p. 273) use Eisner's claim "works of art and performances are important 'medium of expressions' and 'forms of knowing'" to suggest that art is particularly good at revealing "a person's subconscious values, thoughts, feelings, beliefs and perspectives". In both

cases we find the familiar idea that art generates data for reflection. Thus, this use of Eisner does not embrace the embodied view of cognition either.

Finally, Eisner is used to support the claim that engagement with art teaches skills that are useful for managers. Taylor & Ladkin (2009, p. 57) write that "there are particular skills learned in the arts that can then be effectively applied to the management of organisations". Taylor and Ladkin refer to specific skills, such as, voice control of actors or singers, skills in paying attention learned in improvisation theatre, and skills in using mistakes as advantages exercised in jazz improvisation. They also refer to meta-skills, such as, release and collaboration described by Austin and Devin (2003). Similarly, Kerr & Lloyd (2008) use Eisner to state that engagement with art develops aesthetic perception and Romanowska et. al. (2013, p. 1005) use Eisner to argue that "art teaches us to judge in absence of rules, to appraise the consequences of one's choices and to revise and then to make other choices". Thus, Taylor and Ladkin's meta-skills, Austin and Devin's release and collaboration, and Romanowska's judging in the absence of rules can all be seen as *examples* of the forms of thinking, which Eisner claims are evoked by experiencing art. However, none of the above authors engage with the underlying idea, which is so central to Eisner's work, that experiencing art and art creation creates forms of thinking.

Art creation as knowledge construction: Some scholars focus on the creation of works of art as a process of *construction* of knowledge (Hansen et al., 2007; Sutherland, 2013). This view draws on a large body of literature about art-based research methods (Barone & Eisner, 2011; Barry & Hansen, 2008; Blaikie, 2009; Cahnmann-Taylor & Siegesmund, 2007; Elkins, 2009; Irwin & De Cosson, 2004; J. Knowles & Cole, n.d.; Leavy, 2009; McNiff, 1998, 2010; Norris, 2010; Smith & Dean, 2009; Springgay, Irwin, & Leggo, 2007; Sullivan, 2010; Taylor, 2004; Warren, 2008). Barone and Eisner (Barone & Eisner, 2011, p. 1) writes that "arts based research is an effort to extend beyond the limiting constraints of discursive communication in order to express meanings that otherwise would be ineffable". This relates to Langer's idea about aesthetic forms, which can express experience that is difficult (or even impossible) to express in discursive forms. However, In art-based research, aesthetic forms are seen not only as a medium for representing aesthetic data, but the process of creating aesthetic forms is also seen as a way of *constructing* knowledge – a wordless counterpart to reflection. James (2007) expresses this particularly clearly, when she objects to the politically imposed demand that written reflective essays should be part of fashion design education at The London College of Fashion. Her reason for objecting is, that for fashion design students, reflection occurs in the process of drawing sketches and creating

look books – not the process of writing essays (James, 2007). In their book on art-based research, Tom Barone and Eliot Eisner writes: "the contribution of arts based research is not that it leads to claims in propositional form about states of affairs but that it addresses complex and often subtle interactions and that it provides an image of those interactions in ways that makes them noticeable" (Barone & Eisner, 2011, p. 3).

Barone and Eisner as well as James, propose the view that going through the process of creating a work of art (or the process of seriously contemplating a work of art) in itself transforms aesthetic experience into knowledge that can guide action, without the need of a hypothesized abstract faculty of reflection. This view is, however, consistently changed in the literature on ABMs in management education. For example, Sutherland writes that:

> "Participants involved in arts-based education learn experientially by transforming aesthetic experiences to develop non-rational, non-logical capabilities and self-knowledge that constitute and cultivate experiential knowing, aesthetic awareness and, in general, the so called soft issues of managing and leading" (Sutherland, 2013, p. 26).

However, to facilitate this transforming of aesthetic experience, the managers are still asked to write reflection essays on their experiences of going through the ABM (here a conduction master class). Thus, the aesthetic experience is seen as data that needs to be transformed through the use of an abstract reflection process.

As shown above, the learning processes ABMs are seen to facilitate are generally based on the assumption that the experience created through ABMs is *data* we can reflect upon – and the value of ABMs hinges upon their ability to bring data to the reflection process that other methods cannot bring. This assumption is maintained even when theory is developed from thinkers on art, cognition, and education, who explicitly claim that the aesthetic experience generated through art and art creation is, in fact, the substance of all abstract thinking – including reflection – not merely data we can reflect upon, using some disembodied faculty of reason.

Maintaining the assumption that ABMs are methods for producing data for a reflection process – however relevant or unique this data is – and not fully embracing the idea that aesthetic experience is the flesh and blood of thinking itself, makes it difficult to provide simple explanations for certain themes that are well known to scholars in the field of ABMs in management education. Next I look at these themes.

2.6. Staying with the senses, aesthetic agency, and the process of making

In this section, I focus on three themes described by scholars in the field of ABMs in management education, namely, the importance of placing sustained awareness on sensory experience *without* reflecting on it (Seeley & Reason, 2008; Springborg & Sutherland, 2014; Springborg, 2010; Sutherland & Ladkin, 2013; Wicks & Rippin, 2010), aesthetic agency (Springborg & Sutherland, 2014; Sutherland, 2013), and the process of making (Taylor & Ladkin, 2009). I argue that these themes are problematic to adequately explain using the representationalist view of cognition, and I suggest that they can be addressed more adequately using the embodied view of cognintion.

Several authors, in particular those who included their own experience of working with art in the development of their theories, emphasise not only the importance of paying attention to sensory experience, but also of spending time with this experience, *without* reflecting on it, i.e. structuring it, analyzing is, judging it, or concluding anything from it. These scholars refer to this by using Heidegger's concept of *dwelling* (Sutherland & Ladkin, 2013; Sutherland, 2013; Wicks & Rippin, 2010), or by using descriptive phrases, such as, *suspending the intellect* (Seeley & Reason, 2008), or *staying with the senses* (Springborg, 2010). Seeley and Reason (2008) draw a parallel between suspending the intellect and what John Keats calls *negative capability*, i.e. the ability to 'hang out' in doubt and uncertainty, without trying to use the intellect to claim certainty. They write about the perils of reflecting too soon on our experience that:

> "…a rushed response represents a jump from experiential knowing straight to propositional knowing, whilst bypassing presentational knowing altogether. This over-valuing of propositional knowing comes at the expense of potentially subtler, richer and more complex presentational knowing". (Seeley & Reason, 2008, p. 11).

In this quote, it seems that Seeeley and Reason emphasise that too quick reflection will cut individuals off from a fuller, richer, experience containing more complexity, i.e. cut off data that may be important to understand the situation more fully. This is the argument often put forward by advocates of ABMs as methods for facilitating reflexivity and thus grounded in the representationalist view of cognition.

However, the embodied view of cognition offers an additional reason for the importance of suspending reflection. If, as suggested by the embodied view of cognition, reflection (like all thinking) works through reactivations in the sensory-motor cortices, and these cortices are the

same as those used for perception, then reflecting also *adds* to our current perception. In other words, through the act of reflection, individuals *produce* sensory experience that is added to the current sensory experience. It is a recreation of past experience that in turn is perceived as if it were part of the present experience. Seeley and Reason write:

> "Through suspending the intellect, and dwelling in uncertainty in this way, we open ourselves to receive inspiration. This is a gesture of allowing an impulse (or impulses) to enter… It is an effort of "holding back of our own activity – a form of receptive attentiveness that offers the phenomenon a chance to express its own gesture" (Brook, 1998: 56)". (Seeley & Reason, 2008, p. 12)

They also draw a parallel to the Buddhist concept of the beginners mind, i.e. the mind that sees something for the first time and thus does not have the option of reflecting on this by reactivating past experience. This is much more in line with the embodied view of cognition. To offer "the phenomenon a chance to express its own gesture" can be understood as the act of refraining from adding activation in the sensory-motor cortices through acts of reflection.

In short, the importance of staying with the senses from the representationalist view is merely a matter of not cutting oneself off from receiving important information – in particular information about complexity. But this explanation does not seem to be adequate. The embodied view of cognition provides additional explanation for the importance of staying with the senses, in that it is also a matter of not adding sensory-motor experience to the present situation, which inevitably happens in the act of reflecting, because all thinking is grounded in reactivations in the sensory-motor cortices.

Scholars have also claimed that staying with the senses enables novel kinds of action, or more attuned kinds of action. Sutherland has coined the term *aesthetic agency* to capture the idea that awareness of the aesthetic qualities of experience enables action (Springborg & Sutherland, 2014; Sutherland & Gosling, 2010; Sutherland & Ladkin, 2013; Sutherland, 2013). Seeley and Reason (2008, p. 7) refer to the same idea. They claim that through giving attention to sensuous encountering and *suspending intellectual reactions and staying with receptive attention,* action can emerge. They call this action 'bodying forth' and 'being in-formed' to emphasise that the action is grounded in bodily experience – rather than in abstract reflection upon this experience. A similar pattern of accessing novel action through a period of immersion in sensory experience without reflection can be seen in other theories as well. Most notably, Austin and Devin (2003) propose

that mental 'release' is the starting point of creative work and collaboration and Scharmer's (2007) Theory U – as used by Lotte Darsø (2004) – suggests that going through a phase of being present with sensations (presencing) gives the ability to act in novel and more attuned ways (act from the emergent future). In these suggestions, it is possible to recognise the suggestion set forth by Dewey and Schustermann that aesthetic experience can spill over into other experiences and enhance them (Taylor & Hansen, 2005).

I do not wish to collapse all of these propositions into one, denying that there are differences and that they are born out of different projects. Rather, my point is that they all pose similar challenges to the representationalist view of cognition, in that they all highlight the importance of spending time on sensing without reflecting in order to access some desirable type of action. This is difficult to explain using a representationalist view of cognition in which reflection is a necessary component in transforming experience into inner representations that can guide action.

Finally, Taylor and Ladkin (2009) suggests that ABMs can facilitate a number of learning processes. They call one of these 'making' and define it as

> "The very making of art can foster a deeper experience of personal presence and connection, which can serve as a healing process for managers and leaders who may so often experience their lives as fragmented and disconnected" (Taylor & Ladkin, 2009, p. 56).

Later they describe the process in the words of Dick Richards: "as the artist creates the work, the work creates the artist" (Taylor & Ladkin, 2009, p. 60). If experiences created during ABMs are seen merely as data that enrich our reflection, then it is very difficult to explain what it means that such experience can have a healing effect and even create the creator.

In the following, I will argue that the embodied view of cognition, offers interesting ways of explaining themes, such as, the importance of staying with the senses, the aesthetic agency arising from this, and the process Taylor and Ladkin call *making*. Before making this argument, however, I need to introduce two theories based on the embodied view of cognition in greater depth.

2.7. Cognitive Metaphor Theory and simulations theories – a new basis for exploring ABMs

I now look at the confluence of Cognitive Metaphor Theory (CMT) (Grady, 1997; Johnson, 2007; Lakoff & Johnson, 1980, 1999) from linguistics and the simulation theory called Perceptual Symbol System Theory (Barsalou, 1999, 2008; Niedenthal et al., 2005; Wilson, 2002) from cognitive science. I focus on four ideas in particular:

1. **CMT:** The distinction between primary and complex metaphors
2. **Simulation theories:** The claim that all concepts and cognitive processes (including reflection) are based in reactivations in sensory-motor cortices (simulations).
3. **Simulation theories:** The claim that abstract concepts are grounded more in sensory experience related to introspection than concrete concepts (Barsalou & Wiemer-Hastings, 2005)
4. **Simulation theories:** The claim that different simulations are used to support different interactions with the same phenomenon (Barsalou, 2008).

I begin by placing CMT and simulation theories on the map of embodied cognition. I then describe CMT and simulation theory in some detail. At the end of the section, I review some empirical findings supporting these claims, and some of criticism of the theories.

In the following section (2.8), I argue that these ideas offer a useful base for studying ABMs in management education.

2.7.1. Claims of embodied cognition

Many theories claim that cognition is embodied in one form or another. Wilson (2002) has reviewed these and suggested six categories of embodiment claims. For example, Wilson mentions the claim that cognition initially evolves from interaction with the environment (including the body), and the claim that cognition is distributed and includes elements in the environment. However, the most radical of the claims in embodied cognition are found in the so-called simulation theories. Here it is claimed that:

> "Even when decoupled from the environment, the activity of the mind is grounded in mechanisms that evolved for interaction with the environment—that is, mechanisms of sensory processing and motor control" (Wilson, 2002, p. 626).

This claim is congruent with the claims about art and cognition reviewed earlier – for example Arnheim's claim that :

> "Perceptual and pictorial shapes are not only translation of thought products but the very flesh and blood of thinking itself" (Arnheim, 1969, p. 134)

I now turn to two theories that, in slightly different ways, propose mechanisms through which "the activities of the mind are grounded in … sensory processing and motor control" (Wilson, 2002, p. 626). I use these theories to formulate a base from which to explore ABMs that is free of the pitfalls of the representationalist view of cognition.

2.7.2. Cognitive Metaphor Theory

Cognitive Metaphor Theory (CMT) (Grady, 1997, 2005, 2007; Johnson & Rohrer, 2007; Johnson, 2007; Lakoff & Johnson, 1980, 1999; Lakoff, 2012) propose that cognition is metaphorical in nature, i.e. we understand our experience with one phenomenon, in terms of our experience with another phenomenon. CMT distinguishes between complex and primary metaphors. Simply put, complex metaphors can be voluntarily changed, whereas primary metaphors are 'hardwired' and based on the consistent co-occurrence of phenomena in our past experience. Furthermore, complex metaphors build on one or more primary metaphors. The distinction between primary and complex metaphors and the description of their relationship, can be used as a theoretical lens through which to explore ABMs in management education.

In 1980, George Lakoff and Mark Johnson suggested "our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature" (Lakoff & Johnson, 1980, p. 3). The basis for this claim was an analysis of metaphors in everyday language. Lakoff and Johnson found that such metaphors formed groups that pointed to underlying conceptual metaphor, which structured, not only how we speak, but also how we perceive, think, and act. For example, when speaking about argumentation, individuals will often use a number of metaphorical expressions, such as, indefensible arguments, shooting at or attacking or demolishing an opponent's argument, defending or holding or abandoning one's own position, a critique hitting the target, making advances or losing ground, and winning and losing arguments. All these expressions obtain their meaning from an underlying conceptual metaphor where argumentation is seen in terms of warfare.

One immediate problem with claiming that our understanding is metaphorical in nature, is that if we understand one target domain (such as argumentation) in terms of another source domain (such as warfare), then we may ask: How do we understand the latter source domain? And if we also understand this domain metaphorically, then we may ask: When does the chain of

metaphors stop? Lakoff and Johnson suggested that the chain of metaphors is grounded in fundamental bodily, sensory experiences. For example, sensory experiences of objects and substances, such as, heavy, light, smooth, textured, dense, spacious, warm, cold, and experiences of bodily dimensions, such as, up-down, centre-periphery, front-back, near-far, inside-outside. Thus, these embodied experiences become the starting point from which we metaphorically develop understanding of all other phenomena.

Grady (1997) developed this theory further by proposing a distinction between two kinds of cognitive metaphors: Primary and complex metaphors. Primary metaphors are those that arise from experienced correlations in an unconscious and automatic way. For example, a child may see water poured into a glass and notice that the surface rises and more water is added. Such experiences forms the basis of the primary (conceptual) metaphor *more is up/less is down,* which is visible in expressions, such as, filling *up* the tank, *lowering* expectations, etc. Similarly, because parents show affection by holding babies close to their bodies, affection and warmth often occur simultaneously in a child's experience. This gives rise to the primary metaphor, *affection is warmth*, which is visible in expressions, such as, he is a *warm* person, he gave me the *cold* shoulder, a *warm* smile, etc. Other primary metaphors include: categories are containers, purposes are destinations, importance is size, difficulties are burdens, similarity is closeness, organisation is physical structure, time is motion, change is motion, causes are physical forces, knowing is seeing, understanding is grasping, and desire is hunger to name a few. Primary metaphors are the fundamental building blocks from which more complex metaphors can be built and which place restrictions on which complex metaphors will make sense. For example, the conceptual metaphor *purposeful activities are journeys* can be seen as based on primary metaphors, such as, *goals are destinations* and *activity is motion*. Primary metaphors are often found universally in all languages. This apparent universality may be due to primary metaphors being based in experiential correlations that are likely to be universal human experiences. In contrast, complex metaphors are more likely to be culturally specific.

CMT is useful to the study of ABMs in management education because it moves beyond the idea that experience is mere data to reflect upon. In CMT, experience is both target and source domain. Whereas experience in the target domain can be understood as data (e.g. we wish to make sense of our experience of argumentation), experience in the source domain is the tool through which we forge this understanding (e.g. we use experience related to warfare to structure our experience of argumentaiton).

2.7.3. Simulation theories

Simulation theories, such as Barsalou's Perceptual Symbol Systems Theory (Barsalou, 1999, 2008) proposes (similarly to CMT) that all concepts, including abstract concepts, are represented in the brain, not through abstract language-like symbols, but through reactivation in the sensory-motor cortices – so-called simulations. In other words, the central claim in simulation theories is that the same systems in the brain are used for perception, physical interaction, and for thinking.

Simulation theories do not consider whether or not this can be formulated in terms of a metaphorical relationship between the phenomenon represented through a specific activation pattern and the phenomenon that first triggered this activation pattern. As such, it is different from CMT. However, ideas from simulation theories have been used to develop CMT. So much that the version of CMT that was formulated, beginning with Grady's distinction between primary and secondary metaphors (Grady, 1997; Lakoff & Johnson, 1999) had been referred to as the neural version of CMT (Lakoff, 2012). The main ideas from simulation theory that I will use to explore ABMs in management education are

1. The claim that all concepts and cognitive processes (including reflection) are based in reactivations in sensory-motor cortices (simulations).
2. The claim that abstract concepts are grounded more in sensory experience related to introspection than concrete concepts (Barsalou & Wiemer-Hastings, 2005).
3. The claim that different simulations are used to support different interactions with the same phenomenon (Barsalou, 2008).

Since these claims are not well known to all outside cognitive science, I take time to explain them in some detail and relate their relevance to the study of ABMs in management education.

To explain the central claim that all concepts are based in simulations, one can say that the only way to think of a concept, such as, *chair* is by partially reactivating the patterns of neurons that are typically activated when one sees a chair, sit in it, move it, hear the noises produced when interacting with a chair, etc. – i.e. by creating a simulation of the chair. Whereas this may not seem surprising when thinking of concrete concepts like *chair*, the theory proposes that this is also true for abstract concepts, such as, love, truth, freedom, invention, and beauty. To represent such abstract concept, individuals appropriate parts of the activation patterns they have come to know through the body and our body's interactions with the physical environment (Barsalou & Wiemer-Hastings, 2005; Johnson, 2007; Wiemer-Hastings & Xu, 2005). For example, a concept

like freedom may in part be represented through simulation of the experience of being able to move freely, or the experience of watching a wide-open space. It has been found, that abstract concepts, opposed to concrete concepts, rely to a higher degree on activation of sensory perceptions relating to introspection, e.g. affects (Barsalou & Wiemer-Hastings, 2005).

In simulation theory, it is furthermore suggested that we have groups of neurons (simulators) that are able to activate our sensory and motor cortices to create different simulations of a particular concept, appropriate to the kind of interaction we wish to perform with this concept. Barsalou and Wiemer-Hastings (2005: 156) write that concepts can be seen as "a large collection of situational representations" supporting "individualised interactions with concept instances", i.e. a concept (a simulator) is a large collection of neurological activation patterns (simulations) relevant to the concept. For example, when thinking of a chair in the context of redecorating the living room, the chair may be represented by a simulation in the visual cortices for colour, shape, and size. By contrast, when thinking of a chair in the context of moving furniture, it may be represented by a simulation in the motor centres that have to do with weight and engaging the muscles needed to lift the chair (Dantzig et al. 2008: 580). The neurological architecture that enables the existence of simulators and simulations is Damasio's convergence zone architecture (Damasio, 1989; Meyer & Damasio, 2009). However, it is beyond the scope of this dissertation to engage in a detailed discussion of this particular theory.

Simulation theories are useful to the study of ABMs in management education because they, like CMT, offer a view of how cognition function that is congruent with the core claims from philosophers of art and cognition, e.g. Arnheim's claim that "Perceptual and pictorial shapes are not only translation of thought products but the very flesh and blood of thinking itself" (Arnheim, 1969, p. 134). Furthermore, they add to CMT by suggesting that abstract concepts (i.e. concepts that refer to "entities that are neither purely physical nor spatially constrained" (Barsalou & Wiemer-Hastings, 2005, p. 129), in contrast to concrete concepts, rely more on sensations related to introspection. This is important to the study of ABMs in management education because many concepts relevant to the work of managers are abstract, e.g., leadership, competence, brand, strategy, ethics, innovation, organisational change, customer satisfaction, etc.

2.7.4. Empirical evidence for the embodied view

There is a growing body of empirical evidence for the claims found in Cognitive Metaphor Theory and simulation theories. Below, I have chosen to mention quite a few studies providing such

evidence, even though these individually are not core to my argument. However, it is important to my argument to give an impression of the breadth of this empirical research. For further reviews of empirical evidence see (Barsalou, 2008; Bergen, 2012; Niedenthal et al., 2005; Rohrer, 2007; Wilson, 2002). I start by looking at evidence for the existence of primary metaphors.

Gibbs, Bogdanovich, Sykes, and Barr (1997) explored whether individuals access the source domain when understanding the meaning of idioms containing metaphors. Participants were asked to first read a short story (seven lines) and then look at a letter string and determine whether it included an English word. The stories ended with either an idiom using a primal conceptual metaphor (e.g. idiom: 'the manager held all the cards', metaphor: 'control is possessing/retaining objects') or a paraphrase of the literal meaning (e.g. 'the manager was in total control). The following letter strings either contained a word relating to the conceptual metaphor (e.g. *retain* relating to control is retaining/possessing objects) or a similar word that was not related to the metaphor (e.g. remain). It was found that participants were significantly faster at recognising words in the letter string after reading a story with an idiom based on a cognitive metaphor relating to the meaning of this word. This was taken as evidence that when reading the story, participants did activate the primary cognitive metaphor in order to understand the meaning of the idiom, and that this primed the participants so they were faster at recognising words related to the source domain of the metaphor (Gibbs et al., 1997). Non-metaphorical sentences with different meanings and idioms with similar literal meaning but based on different primary metaphors were used to control the result.

Boroditsky and Ramscar (2002) explored how physical circumstances influenced which of two common cognitive metaphors for *time* participants would use. Time is either seen as objects coming towards one (the holiday is approaching) or a landscape one is moving through (we are approaching the holiday). The experiment showed that people on a moving train are significantly more likely to use the first metaphor and people waiting for a train are significantly more likely to use the second. This was taken as evidence that the physical situation primed participants to either use one or the other cognitive metaphor when thinking about time.

A number of studies have explored the central claim in simulation theories: That sensory and motor systems are also used for cognitive processes. Wells & Petty (1980) found that listening to recorded statements while nodding the head, made subjects more likely to agree with these statements. Shaking the head made them less likely to agree. Subjects were told that the

experiment was a test of whether the headphones would stay on the head during movement. Similarly, Stepper & Strack (1993) found that facilitating people's smiling reflex while they watched cartoons made them judge these cartoons as funnier than when the smiling reflex was inhibited. The facilitation/inhibition of the smiling reflex was done in a non-obvious way by asking subjects to hold a pen either with their teeth (facilitates smiling) or lips (inhibits smiling).

It also has been found that arm flexion, a movement used to bring objects closer, and arm extension, a movement used to avoid objects, influences our cognition in many ways. Pushing up on a table from beneath (arm flexion) made subjects more positive toward new Chinese ideographs than subjects pushing down on a table (arm extension) (Cacioppo, Priester & Bernston 1993). Subjects pulling a lever (arm flexion) to indicate the appearance of a word on a computer screen reacted faster to positive words than to negative words. The opposite was the case when asked to push the lever (arm extension) when words appeared (Chen & Bargh, 1999). Kosslyn, Thompson, Wraga, and Alpert (2001) asked subjects to determine whether one picture of a 3D model was a rotated image or a rotated mirror image of another picture of the same 3D model. They found that if they allowed subjects to first rotate a real 3D model using their right hand, then later mental rotations were performed quicker counter-clock wise (a natural way to turn an outstretched right arm and hand) than clock-wise (an awkward way to rotate right arm and hand).

Studies of brain lesions have shown that when specific sensory and motor centres are damaged this affects knowledge of categories related to perceptions made through these centres. For example, damage to motor centres is likely to result in loss of knowledge relating to tools, i.e. knowledge obtained through motor centres. Similarly, damage to centres dealing with spatial processing is likely to result in loss of location knowledge (Barsalou, 2008, p. 627). This supports that knowledge is dependent on reactivations in the sensory and motor centres – on simulations.

Finally, the discovery of mirror neurons provide evidence that activation in sensory and motor cortices is part of how we give meaning to other peoples' actions. Mirror neurons are neurons that activate both when an individual perform an action him-self and when he sees someone else performing this action (Fogassi & Ferrari, 2007).

Given the amount of empirical evidence in support of the embodied view of cognition, this view seems worth considering in any study involving theorising about cognitive processes, such as the present study of ABMs in management education.

2.7.5. Criticism

Given the strength of empirical evidence, it is no longer a question of whether the representationalist view of cognition or the embodied view of cognition is more accurate. Rather it is a question of working out how to best describe embodied cognition. In this section, I focus on two points of criticism of CMT relevant to the present study.

Gendlin, though generally sympathetic towards CMT, has criticised CMT for seeing categories of bodily experience as the fundamental building blocks of our understanding (Gendlin, 1997). Even though this critique was set forth in 1997, it is still relevant. Gendlin writes:

> "Johnson and I agree that new metaphorical meanings are not derived from preexisting similarities, and that metaphors can be true. I propose a kind of concept that enables us to think with and about how that happens" (Gendlin, 1997, p. 175).

Gendlin holds that the meaning of a metaphor cannot be a matter of simply transferring experiential knowledge from a source domain to a target domain. He claims that a word from a source domain will always attain a new meaning in the target situation in which it is used. With this claim he also emphasises that the metaphorically used word can only acquire new precise meaning in the target situation *because we already know something about the target situation*. It is our knowledge of the target situation that allows us to give a word from a source domain a new meaning when used in the target situation. From this point of view, the similarities between source and target domain are effects of this new meaning – not what caused the creation of the metaphor in the first place.

Barsalou and Wiemer-Hastings (2005) provide a similar critique of CMT from the point of view of simulation theory. They write:

> "If an abstract concept has no structure based on direct experience, the concrete metaphor would have nothing to map into. Certainly, metaphors may interpret direct experience and add new material to it. The point is, however, that metaphors complement direct experience of abstract concepts, which often appears extensive." (Barsalou & Wiemer-Hastings, 2005, p. 134).

The extensive direct experience of abstract concepts they refer to is, for example, introspective observation.

Due to this criticism, I choose to conceive metaphors as experience gained in one domain, used to structure experience gained in another domain, and to emphasise the distinction between the experience and the words used to refer to the experience. I agree that the experience used for this structuring will take on a new meaning when used in this way. I furthermore agree with Gendlin, that it is key to explore how it is possible for individuals to know this new meaning. Gendlin suggests that this knowledge can be accessed through the process of focusing on the bodily felt sense, which is prior to *any* categories – including categories of bodily dimensions referred to by Johnson, such as, up-down, periphery-center. Gendlin suggests that we can access this felt sense by walking past categories of experience and placing sustained awareness on the bodily felt sense – even if it is often not immediately accessible or describable through words, i.e. we are sensing something but cannot describe it – only feel it. From this point of view, knowing a *name* of a sensation or recognising it, is not part of staying with the senses (Springborg & Sutherland, 2014; Springborg, 2010), dwelling (Grisoni, 2012; Heidegger, 1971; Sutherland & Ladkin, 2013), or giving attention to the sensuous encounter while suspending the intellect (Seeley & Reason, 2008).

Awareness of this critique of CMT is important when using CMT as a theoretical lens to explore ABMs in management education because it may help sensitise the researcher to the effects of the lens used.

2.8. The embodied view of cognition as basis for exploring ABMs

The central claim, for which I have argued in this literature review, has been that the ideas from CMT and simulation theories discussed above, offer a theoretical lens suitable for exploring ABMs in management education. A lens that may well reveal aspects of ABMs that cannot be revealed when using theories grounded in the representationalist view of cognition.

To support this claim further, I now consider how they can offer interesting perspectives on the questions I raised regarding the importance of staying with the senses, aesthetic agency, and making – even before embarking on an empirical research journey.

In the above, I have shown that authors in the field of ABMs in management education mainly operate from a representationalist view of cognition. A view that is inherited through the theories that have been imported from other fields, to describe what learning processes ABMs facilitate. This has focused the field on discussions about what kind of data is relevant to managers' reflective processes and how ABMs are able to make such data available for these

reflection processes. The question of what faculty is used for reflection itself is never seriously addressed. It is simply assumed that our mind has the capacity to reflect on anything we become aware of. Thus, the reflection process itself remains a disembodied and abstract process, working on the various forms of data that are made conscious.

When this logic met the field of organisational aesthetics, scholars in the field of ABMs in management education, argued that it is important to include the aesthetic aspects of experience in reflection and that aesthetic forms serve the purpose of making these aspects conscious. However, stating that aesthetics aspects of experience are important to include in the reflective process, implies that they could also be excluded. It implies that there can exist, a reflective process that operates purely with disembodied inner symbols. Thus, arguing that it is important to include aesthetic experience in one's reflection, only makes sense from the representationalist view of the cognition.

From the embodied view of cognition, there is no choice. If we take seriously the claim that all our abstract thinking is grounded in simulations (in reactivations in the sensory and motor cortices), then aesthetic experience has to be both the data we reflect upon and the tool we use to reflect on this data. Any reflection can be seen as a process of pitching two types of activation in our sensory and motor cortices against each other. Reflection can be seen as a process where some sensory experience is used to structure other sensory experience. Thus, 'simplifying', 'conceptualising', 'analysing', 'judging', or 'drawing conclusions from' *present* experience are all names for the act of using old experience to structure this present experience, i.e. treating it as data. However, if an individual hangs out long enough with the present sensory experience and, as much as possible, refrains from 'simplifying', 'conceptualising', 'analysing', 'judging', or 'drawing conclusions', the present sensory experience can shift from being data to be structured to becoming a tool used for structuring. This idea is part of what I intend to explore in my research.

This view offers a way to explain why a number of scholars emphasise the need to stay with the sensory experience: It is not because we need to wait for the aesthetic data to be received (as the representationalist view of cognition might suggest), it is because by staying with the sensory experience, we choose to refrain from treating the new sensory experience as data and give it time to become a tool.

Furthermore, this offers an explanation of Dewey and Eisner's claim, that engagement with art develops the mind, and Schusterman's similar claim that aesthetic experiences spill over and enhance and deepen other activities. It generates new tools for structuring experience (develops the mind), and using these tools in other activities can potentially enhance and deepen them. Thus, this view also offers an explanation of what aesthetic agency might be, namely, the agency that comes from having new tools (sensory experiences) for structuring experience.

Finally, this view offers an explanation of the process Taylor and Ladkin call making, i.e. how the process of art creation creates the creator. When sensory experiences become tools for structuring further experiences, they will leave their mark on these experiences. The tools we use for structuring our current experience become ever present in this experience. And what is constant in our experience, we are likely to perceive as ourselves. Gregory Bateson (Bateson, 1972, p. 218) expresses this link between self-identity and how we structure experience by stating that words for personality traits, such as dominant, submissive, succouring, and dependant, are really words for how we punctuate the flow of events. For example, imagine that an individual's experience consists of a series of problems and solutions (problem – solution – problem – solution – problem – solution – problem… etc.). One individual may structure this by saying every time I face a problem I overcome it – seeing the above flow as a sequence of problem-solution patterns. Another individual may punctuate the very same flow of events in the manner: Every time I solve one problem another arrives – seeing the above flow as a sequence of solution- problem patterns. It is fair to say that these two individuals may be described as having very different personalities. If aesthetic experience truly changes the way an individual structure presents experience, it can in a very real way impact his personality. I will not go deeper in to this argument here, but simply leave it as a suggestion that the embodied view of cognition does offer an interesting perspective on how experiencing the process of art creation may be said to create the creator.

To sum up, I have argued that current literature on ABMs in management education has uncritically adopted a representationalist view of cognition. This prevents theorists from fully embracing ideas about art and cognition developed by Langer, Dewey, Arnheim and others, even though scholars in the field of ABMs do include these thinkers in their arguments and theory building. Furthermore, the representationalist view of cognition makes it difficult to explain themes that are widely acknowledged in the field, such as, the importance of staying with the senses, aesthetic agency, and the process of making. Finally, I have argued that CMT and

simulation theory, offer interesting perspectives on these themes and, thus, an interesting alternative starting point for exploring ABMs in management education.

2.9. Research question

Based on the above, I propose the following research question:

> *What insights can be gained from using the theoretical lens of Cognitive Metaphor Theory and simulation theories, to explain the learning processes ABMs in management education can facilitate?*

In particular, I propose to use the distinction between primary and complex metaphors, the idea that all abstract concepts are based in simulations, that abstract concepts are grounded more in sensory experience related to introspection than concrete concepts, and that different interactions with a phenomenon are supported by different simulations of this phenomenon.

Next, I will describe a method for exploring this question.

3. Methodology

In this section, I give a brief overview of my philosophical perspective and method.

Research question: The research question I developed in the literature review above was:

> *What insights can be gained from using the theoretical lens of Cognitive Metaphor Theory and simulation theories to explain the learning processes ABMs in management education can facilitate?*

Philosophical perspective: In the research question I have already decided on the theory I wish to use, namely CMT and simulation theory. This theory is based on a realist ontology combined with an interpretivist epistemology. Mark Jonson has dubbed the philosophical perspective, underpinning CMT, Embodied Realism (Johnson & Rohrer, 2007). To ensure consistency, I chose to base my research on this philosophical perspective.

In short, Embodied Realism is a perspective grounded in American Pragmatism, in particular the principles of continuity and of primacy of action (will explain below), and developed through integrating ideas from CMT and simulation theories. Embodied Realism has an affinity with phenomenology in seeing experience as always being shaped by both an external world and elements of the perceiving subjects past experience. Like in phenomenology, embodied realists believe that real phenomena exist outside the individual, with properties independent from the individual's perception/interpretation (realist ontology), and that the individual can only know these phenomena through the body, i.e. through the effect they have on his sensory organs and on the metaphorical structures he uses to perceive ways he can engage with the phenomena (interpretivist epistemology).

Even though it is not mentioned in texts on Embodied Realism, I wish to note that this philosophical perspective is consistent with the phenomenological practice known as *bracketing*. The practice of bracketing, simply put, suggests that even if our experience will always contain interpretation, it is possible to set aside (to bracket) parts of this interpretation. This practice is consistent with CMT in that complex metaphors can be seen as containing a higher degree of interpretation than primary metaphors. For example, a very common primary metaphor for time is: Time is movement forward through a landscape towards the future. This metaphor holds less interpretation that common complex metaphors, such as, time is money, time is a teacher, time is a healer, or time is a thief.

Knowledge claims: Thus, I believe the learning processes, I wish to explore, are *real* in the sense that something happens with participants during ABMs, and this something has properties independent of my interpretation of what happens. However, I can only know this something through my sensory/metaphorical interpretations. Calling it a 'learning process' is part of my interpretation and so is my purpose to generate practical knowledge. The knowledge claims I can hope to produce are, thus, metaphors for the learning processes that allow facilitators to perceive the learning processes in ways that can enhance their ability to *act* as facilitators.

Research strategy: In consistency with this philosophical perspective, I have chosen to follow an abductive research strategy that Alvesson and Sköldberg (2009) call 'reflexive interpretation'. If real phenomena exist independent of the researcher, then it is important to adopt systematic and rigorous approaches to data collection and processing found in empirically oriented research traditions, such as, grounded research and ethnomethodology. At the same time, because the phenomena can only be known through our interpretations of these phenomena, it is also important to have a rigorous reflection, not only on the data, but also on the process of how this data is constructed and interpreted. For this purpose, Alvesson and Sköldberg propose that researchers use the perspectives of hermeneutics, critical theory, and postmodernism to ensure that "due attention is paid to the interpretive, political and rhetorical nature of empirical research" (Alvesson & Sköldberg, 2000, p. vii).

Context: I wished to formulate theory about learning processes facilitated by ABMs that is practically useful for facilitators who wish to consistently realise the potential of such methods in management education. I did so by exploring learning processes of 60 managers, working in Danish companies, engaging with what they perceive as important, yet unsolvable problems in their current work life. They did so through using art creation to either work with complex metaphors or primary metaphors, or simply by talking about their problems without the use of any art.

Research design: For this purpose I need what I call *sassy data* – data that can answer back. I need data that is sufficiently rich and complex so that it enables me to rigorously challenge my interpretations of the data, and through this, attain validity of my knowledge claims. I have chosen to create a design by combining interviews with Solomon Four group design. The latter may be a surprising element in the light of my interpritivist epistemology, as this design is an experimental design and as such, associated with positivism and the belief that we may observe

reality, unaffected by our own interpretations. However, I use Solomon Four Group design in a very different way than originally intended. I do not use statistical methods to compare tests made at different times in different groups to gain objective knowledge of the effects of certain interventions (positivist epistemology). Instead, comparing interviews done at different times in relation to different interventions allow me to reflect upon the effects of the interviews as opposed to the effects of the interventions and to ground this reflection in the collected data. Simply interviewing all participants before and after different interventions does not produce data that supports this kind of reflection. I explain this further below.

Sixty managers participated in the research. All were currently employed as managers and had at least three years experience as such. I found participants ( ) by sending out electronic invitations ( ) to my personal network and to all students on all executive master programmes at Copenhagen Business School and on one executive master programme at Danish Pedagogical University (LAICS). The invitation stated that the purpose of the project was comparing effects of art-based and conversation-based methods for looking at organisational problems. When the participants signed up, they were randomly assigned to one of six groups. To ensure commitment, I allowed participants to work with self selected problems ( ) currently relevant to them. To ensure ethics, I told participants that all participation was voluntary, that they could leave the research at any time without needing to explain, that the recorded material would be kept confidential, and would be anonymised in both dissertation and subsequent publications. Finally, I asked participants to let me know if they had special concerns regarding confidentiality so that I could set these interviews aside and transcribe them myself. Before sending any recordings to people assisting me with the transcription (see later), I removed the sections where participants presented their name and company name to ensure anonymity.

I designed two art-based interventions, to explore the difference between using art creation to work with complex and primary metaphors. In both, participants worked with poetry, art photography, and abstract drawing to explore the selected problem. In one intervention, metaphorical inquiry (MI), participants used art-based media to create complex metaphors for their problems. In the other, aesthetic inquiry (AI), participants used the same art-based media to work with primary metaphors.

I used semi-structured, individual interviews ( ) to gather data about participants learning processes. In some groups, I interviewed both before and after the intervention, and in some only after. This allowed me to pose challenges to my interpretations regarding the effects of the interventions vs. the effects of the interview procedure and of external factors ( ). All interviews were transcribed ( ) and coded ( ) using a template based on the literature. Figure 2 shows the full research design. Figure 3 shows the data collection process in detail.

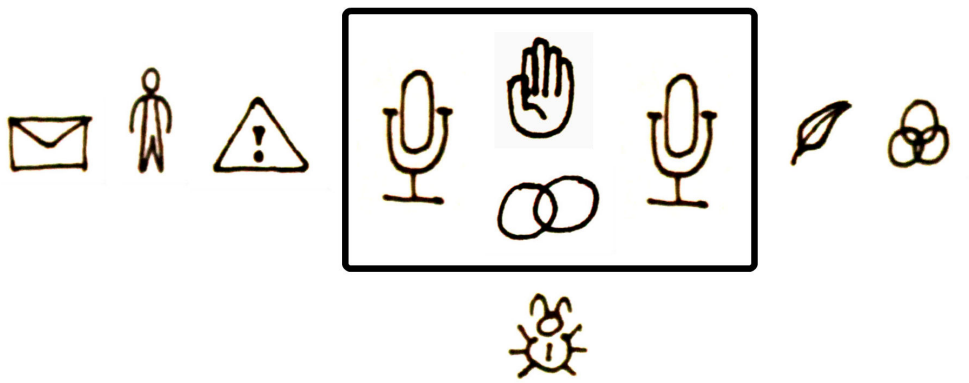


Figure 2: Full research design

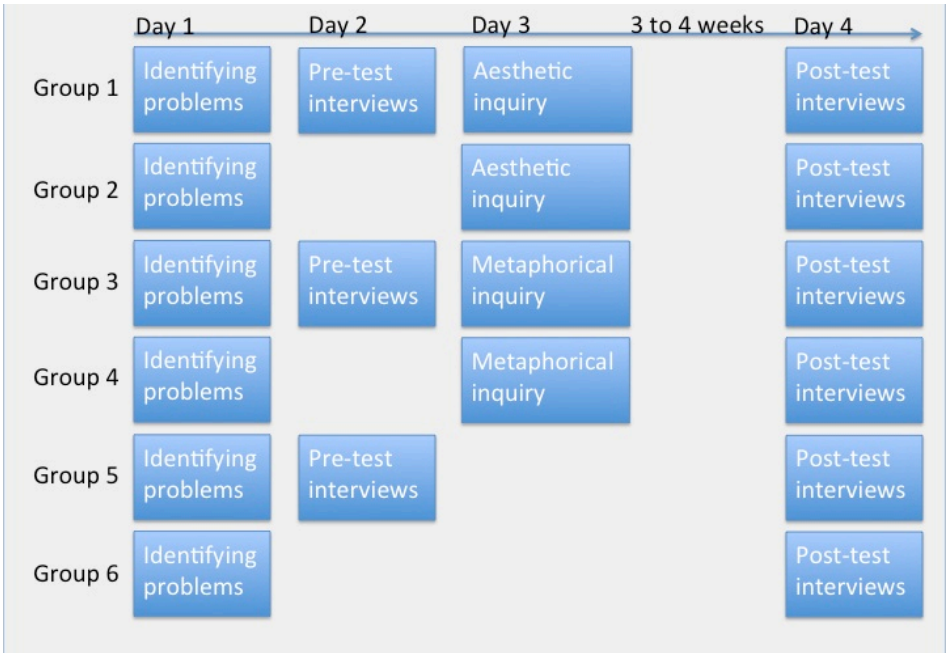


Figure 3: Groups in detail

Data-collection: On day one, I met participants in groups of up to five. I gathered demographic information and spent 10-30 minutes with each, agreeing on which problem they would work with and formulating this problem in one sentence. I emphasised that it should be a problem they

regularly faced. This made it more likely that they would notice if something changed after the intervention. I also emphasised that the problem should appear unsolvable. This would make it easier to argue that any solution the managers would find would be a clear sign of change. The interviews took one hour each and were done individually, either in person or over Skype. The interventions took three hours and were done with 1-5 participants at a time. Between interventions and final interviews there was a period of approximately one month (in a few cases longer). This was to give the managers time to encounter the problem in real life and notice any changes in their perception or action.

Data-analysis: All meetings with participants were recorded with the participants' consent. All interviews and presentations of artwork during the interventions were transcribed and coded using a template based on literature. I presented the initial findings for the participants, other practitioners, and academics in seven presentations. I used these presentations to test whether my interpretations of the data made sense to others and to gather more inspiration for further analysis. During the entire process, I traveled extensively and used my findings in my own teaching of artists, therapists, meditators, and managers. I used this to test whether the knowledge produced had practical value. Finally, I used the methods (MI and AI) to engage with problems I met in relation to the research. Again to explore the practical knowledge I could develop from using the findings.

I now go through the philosophical perspective and the methodology in more detail.

3.1. Philosophical perspective

In this section, I will go through my ontology, epistemology, and criteria for validity of the knowledge claims produced in this research. I will comment on how the ontology and epistemology is held consistent in my choice of theoretical lens, overall research strategy, and concrete procedures for data-collection and data-analysis.

3.1.1. Epistemology and ontology

Even though I implement a structure from a traditional experimental design, I do not work from a realist ontology and a positivist epistemology. Rather I work from what Mark Johnson has dubbed Embodied Realism (Johnson & Rohrer, 2007) the philosophical stand point developed in parallel with the development of CMT. This philosophical perspective combines ideas related to phenomenology, American Pragmatism, and cognitive science. I will briefly go through the main ideas relevant to this research.

Embodied Realism holds that reality does exist beyond the mind of the subject but that it is always also constructed through the lived experience of the subject (Johnson & Rohrer, 2007). This general view is consistent with that of phenomenology. Phenomenology holds that consciousness is intentional, in that it always is consciousness of something and it actively constructs this something. The content of experience is always linked both to the object perceived and to the perceiver who perceive this object as something (Sandberg, 2005). For example, the moment you look at the speaker from your stereo, you perceive it as a particular kind of object, with a particular function, and particular memories, etc. If you are a music producer you may perceive the speaker as a tool for music production that reproduces sound with a flat neutral frequency response. If you are in high school you might perceive the speaker as a tool for partying, and care more about its ability to create loud sounds, rather than having a neutral frequency response. If you are a tribesman, who has never seen a speaker, you may perceive the speaker as a chair or something you can stand on when you give a speech. However, nobody will ever perceive it as an umbrella, because the features of the object do not lend themselves to this perception. Even though there are important differences between Embodied Realism and phenomenology (Zlatev, 2010), both can be seen as holding a realist ontology and an interpretive epistemology as described above.

Embodied Realism also adopts Dewey's notion of continuity of experience, i.e. that any experience will influence all future experiences – for better or for worse. This principle entails that any experience of abstract reasoning must grow out of our more basic experiences of sensory perception and movement. Johnson and Rohrer write:

> "What the continuity thesis entails is that any explanation of the nature and workings of mind, even the most abstract conceptualisation and reasoning, must have its roots in our organismic capacities for perception, feeling, object manipulation and bodily movement" (Johnson & Rohrer, 2007, p. 23)

Similarly, Dewey (1934) uses the principle of continuity to argue that the kind of experiences that are possible when engaging with great works of art, must grow out of our everyday aesthetic experiences. The more general formulation of Dewey's principle of continuity, that includes the two specific versions stated above, is that every experience we can have, grows out of previous experiences and that there is no difference in the fundamental nature of any experiences.

Johnson and Rohrer (2007) find support for this philosophical principle in the claim made in simulation theories, that abstract thinking is grounded in reactivation in the sensory-motor cortices. They claim that as what we experience in the mind and what we experience in the world are all grounded in activity in the sensory-motor cortices, there is no ontological difference between phenomena in the world and in the mind. They claim that:

> "the terms "body" and "mind" are simply convenient shorthand ways of identifying aspects of ongoing organism-enviromnent interactions" (Johnson & Rohrer, 2007, p. 17)

And it is precisely organism-environment interactions that are the driving factor in evolving sensory experience into various acts of cognition. Thus, Embodied Realism also adopt Dewey's notion of the primacy of action, i.e. the claim that the main function of thinking is to support action.

In short, Embodied Realism is a perspective grounded in American Pragmatism, in particular the principles of continuity and of primacy of action, and developed through integrating ideas from simulation theories. This gives Embodied Realism an affinity with phenomenology in seeing experience as always being shaped by both an external world and elements of the perceiving subjects past experience.

Embodied Realism has been criticised in various publications (Haser, 2005; Itkonen, 2003; Sowa, 1999; Zlatev, 2010). Lakoff and Johnson often stage both CMT and Embodied Realism – the philosophical view developed from CMT – as somewhat revolutionary. They do have a tendency to make sweeping general claims about schools of philosophy ignoring the details. Whereas this does facilitate a degree of clarity, it also inspires much critique of "philosophical naiveté" (Zlatev, 2007) and overinflated claims. The critique of Embodied Realism is aimed at issues, such as, the general rhetoric (Haser, 2005), the superficial treatment of far too many philosophical ideas (Haser, 2005; Sowa, 1999; Zlatev, 2010), the failure to account adequately for intersubjectivity (Zlatev, 2010), and failure to integrate phenomenological core ideas (Zlatev, 2010). However, in a review of Haser's critique (Haser, 2005), Fontaine accurately writes:

> "Unfortunately, in heated debates where strong opinions prevail, it is sometimes easy to lose sight of the central issues […] Nowhere in Haser's book are the three central claims of Lakoff and Johnson (1999) put forth clearly: namely, that thought is embodied, unconscious, and to a large extent metaphorical." (Fontaine, 2007, p. 477).

Thus, the kind of critique mentioned above is not aimed at the central claims of CMT and even less so at the general ontological and epistemological stance of Embodied Realism as described above. I, therefore, feel confident in taking this ontological and epistemological stance as the foundation of the present exploration of ABMs in management education. I will later return to criticism more specific to CMT.

Even though it is not mentioned in texts on Embodied Realism, it is important to mention Husserl's notion of bracketing. When combining a realist ontology with an interpretivist epistemology, one accepts that considering what the things are beyond our perception of them makes no sense. Husserl, therefore, proposed to set aside questions of whether objects exist and what their properties may be, independent of our perception and instead analyse how these objects appear to us. Sometimes 'bracketing' is used to refer to this setting aside questions of the objective nature of things. However, bracketing is also used to refer to the practice through which the essence of a phenomenon as it appears to us is found by peeling away parts of this appearance that is not essential to the phenomenon. In this sense, bracketing can be seen as the practice of setting aside nonessential aspects of how a phenomenon appears in the mind. This practice of bracketing is an important part of how I have both collected and analysed the data.

In the following sections, I will illustrate how this philosophical perspective described above is reflected in every aspect of the research: The theoretical lens I have used (simulation theories and Cognitive Metaphor Theory), the purpose of the study (create knowledge, useful to facilitators of ABMs), my overall research strategy (abduction), the way in which I have collected data (semi-structured interviews) and analysed data (e.g. narrative structuring and coding). Finally, I deal with what kind of validity criteria this ontological and epistemological stance give rise to and how I have translated these into concrete parts of the step-by-step methodology described above.

3.1.2. Theoretical lens

Both Cognitive Metaphor Theory and simulation theory are coherent with Embodied Realism.

In Cognitive Metaphor Theory it is claimed that our understanding is metaphorical in nature. This claim is consistent with the claim that the content of our experience is always linked to both the object of perception (target domain) and the perceiver (source domain). For example, if an individual perceives anger as a hot liquid (a common cognitive metaphor), then sensory experience related to anger (target domain) is structured in terms of sensory experience with hot

liquids (source domain). In Cognitive Metaphor Theory, it is also claimed that the root of the metaphorical understanding is the body. Since the body is intimately linked to the perceiver, this claim is also consistent with Embodied Realism.

In simulation theories, the main claim is that all concepts are grounded in reactivations in the sensory and motor cortices. These reactivations are also double bound. They are linked to the objects of perception, since these objects have properties that activate the neurons in these cortices. They are simultaneously linked to the perceiver in that the neurological structure is part of the perceiver's body and in that the reactivations in which concepts are grounded are reactivations of how this particular individual perceiver's neurons in the past have been activated by his surroundings, his particular neurological activation history so to speak.

Both Cognitive Metaphor Theory and simulation theory are coherent with bracketing.

The division of our metaphors in complex and primary metaphors is coherent with the notion of bracketing. When we perceive through complex metaphors our experience is more interpreted than when we perceive through primary metaphors. Complex metaphors can be changed and new ones can be created on the fly to fit a particular situation. In other words, particular complex metaphors can be set aside – or bracketed. For example, the possibility to see the phenomenon of organisations as either machines, living organisms, brains, or psychic prisons (Garath Morgan, 1980) shows that each of these particular metaphors can be bracketed.

Bracketing is often seen as a skill that needs to be trained. Part of this training is developing the capacity to become aware of interpretations – so they can be set aside. This can be challenging at the level of complex metaphors, and much more challenging at the level of primary metaphors. To give a sense of this challenge, one can consider Mark Johnson's (Johnson, 2007) claim that the use of lived experience to relate to reality is what produces the seeming split in object and subject, that is at the heart of Cartesian worldview and positivist/realist research traditions. When lived experience relating to the body, is used as a tool to construe our experience of phenomena outside our bodies, it must necessarily reside from what Polanyi calls focal awareness and move to peripheral awareness. When part of our lived experience is used as a tool to construe other parts of our experience, it becomes transparent. This move creates the illusion that we have awareness of the world and that this awareness is somehow transcending the body. However, Johnson claims that, in fact, everything is construed in terms of our lived experience of our body. In other words, the body is like the oxygen we no longer can smell, because it is ever

present in our experience. This account gives an impression of why bracketing is a skill that needs to be trained.

Simulation theory is also coherent with the notion of bracketing, in that simulations exists at different levels of complexity, parallel to the levels of primary vs. complex metaphors. These levels arise from the neurological architecture proposed by Damasio (Meyer & Damasio, 2009). However, a detailed account of this neurological architecture is beyond the scope of this paper.

Both Cognitive Metaphor Theory and simulation theory are coherent with the primacy of action.

The idea from American pragmatism, that interpretations of any phenomenon ultimately serve the function of supporting interactions with phenomena, is found directly in both Cognitive Metaphor Theory and in simulation theories. Particular metaphors and simulations, respectively, are claimed to serve the purpose of enabling and supporting interaction.

3.1.3. Purpose of study

The purpose of the study is to create knowledge, useful to facilitators of ABMs. This is trivially coherent with the primacy of action. However, the philosophical perspective of Embodied Realism can help specify the purpose. To make this purpose coherent with Embodied Realism, I must see the purpose of the study as the production of experience (through data-collection and data-analysis) I can later use to structure the experience of ABMs through – in ways that provide guidelines for facilitators of ABMs.

3.1.4. Research strategy and overall research design

My chosen research strategy is reflexive interpretation (Alvesson & Sköldberg, 2009). Alvesson and Sköldberg propose a strategy that acknowledge both the importance of empirical data found, e.g., in grounded theory and ethnomethodology, and of reflecting on the reflection found in hermeneutics, critical theory, and postmodernism. Alvesson and Sköldberg see reflexive interpretation as a neither inductive, nor deductive but rather as an abductive strategy. They describe abduction in the following way:

> "Abduction starts from an empirical basis, just like induction, but does not reject theoretical preconceptions and is in that respect closer to deduction. The analysis of the empirical fact(s) may very well be combined with, or preceded by, studies of previous theory in the literature; not as a mechanical application on single cases, but as a source of inspiration for the discovery of patterns that bring understanding. The research process,

> therefore, alternates between (previous) theory and empirical facts, whereby, both are successively reinterpreted in the light of each other" (Alvesson & Sköldberg, 2009, p. 4)

In practice, Alvesson and Sköldberg suggest combining some systematic and rigorous approach to data collection and processing with rich reflection inspired by the perspectives (as contrasted with the concrete methodologies) of hermeneutics, critical theory, and postmodernism. Hermeneutics highlights how any observation is always also an interpretation. Thus, pre-understanding and interpretation is ever present in research, there are no theory free facts. Critical theory highlights how research is influenced by, and supports ideologies and politics. Research results are likely to either support or challenge polices, and ideologies and are in turn influenced by these. Postmodernism highlights the problematic nature of representation, authority, and authorship. Postmodernism raises questions, such as, whether the research text represents anything outside itself, who can be said to be the author of such texts, and which authority it represents.

Alvesson and Sköldberg further suggest that in practical research projects, one or two of the above-mentioned lenses are dominant and the other lenses may be used, for example, at the beginning and the end of the research to broaden the reflexivity. Which lenses to select as the dominant lenses depends on the research question and the purpose of the research.

In the present research, I focus on creating an 'inspiring' body of empirical data. To do this I use interview techniques as described by Kvale (Kvale, 1997) in combination with Solomon Four Group design. I will describe this in detail below. Throughout the research, the hermeneutic focus on the interpretive nature of science is dominant, since the purpose of my research is to produce interpretations that can guide facilitators engaged with ABMs in management education. However, at the beginning and the end of the research, I have included reflections around problems of ideology and politics and problems around the nature of representation, authority, and authorship.

3.1.5. Data collection

My main vehicle for data-collection is the qualitative, semi-structured interviews.

Kvale (1997, pp. 17–19) proposes that there are two very different views of the interview process. He explains these through two metaphors: The interviewee as gold digger vs. the interviewee as traveller. To be coherent with Embodied Realism, the interview process must be

understood as a cocreation of meaning between the interviewer and the interviewee, rather than a process of the interviewer digging out nuggets of knowledge from the interviewee. The interviewer reacts to the interviewee's questions, proposed meaning summaries, etc. The final understanding produced in the analysis will be linked to the perceived object, namely the learning process of the interviewee as it is visible through his statements and works. The final statement is also linked to the perceiver, namely the interviewee who uses his analytical skills, his chosen theoretical frameworks, and his lived experience to structure the data.

Kvale (1997, p. 149) lists a number of interviewer skills that are crucial to securing high quality interviews. These include the ability to pose short and precise questions that prompt long and rich answers, the ability to pursue and clarify meanings, and the ability to interpret the interviewee's answers and verify these interpretations during the interview. Bracketing one's own interpretation is an important element in all of these. Without it, one may speak too much, expressing one's own interpretations. Without it, one might not notice when meanings need to be clarified, one would simply fill the holes with one's own unbracketed interpretations. Without it, one will not be aware of the interpretations as interpretations and would thus, not be able to put them forward as interpretations for verification. Through my work as a therapist, I have over the years developed a keen awareness of when I fill in the blanks in another person's story with my own interpretations. I have developed a habit of asking for validation and I have often experienced that an interpretation that I could never imagine could be different has been rejected or modified in surprising (to me) ways. Therefore, in the interviews, I frequently summed up what I had heard and understood allowing the interviewee to confirm, modify, or reject my interpretation of what had been said. I especially took care of asking for validation when I heard something that I that seemed to be important for answering research question.

The interviews are embedded in a larger frame of a Solomon Four Groups research design.

As mentioned earlier, this design is traditionally related to a positivist perspective, not an Embodied Realist perspective. However, my use of this design is coherent with Embodied Realism in that I do not see it as a tool for uncovering mechanisms that exists independently of my perception of these mechanisms (as would be the case from a positivist perspective). When the content is a mix of the properties of the perceived object and the interpretations of the perceiver, it is important to pay attention to the properties of the perceived object. If one does not pay sufficient attention to these, the resulting experience will be too much a product of the

researchers own interpretations. This has, for example, been used in Rorschach test where the object of perception (the ink blots), offer minimal restrictions on the interpretations of the observer, making it possible to study these interpretations. I use the Solomon Four Group design to ensure that my data is not mere ink blots. I use the design to ensure that my data places sufficient restrictions on my possible interpretations. Such restrictions will both assist me in discovering my habitual interpretations, making it possible to bracket them, and increase the likelihood that my interpretations will provide good guidelines for practice – it offers a reality check so to speak.

3.1.6. Data analysis

Kvale (1997, p. 189) lists five ways of analysing interviews:

- *Meaning condensation,* where interview sections are reduced to the dominant themes
- *Meaning categorisation,* where quotes are sorted according to categories based on literature or developed during research process
- *Narrative meaning structuring,* where an interview (or several interviews) is translated into a narrative form
- *Interpretation,* where the interview is interpreted to reach deeper meanings as in interpretations of dreams or poetry or as in post-modern deconstruction
- *Ad-hoc methods,* where the above are mixed.

Ninety one-hour interviews produce a very large amount of data. Therefore, interpretations, which typically produces a text that is larger than the text being interpreted is not possible. I chose to use a combination of narrative structuring and meaning categorization.

For the coding (meaning categorisation), I started with a template based on literature and developed this as I read through the transcripts. Template based coding is consistent with Embodied Realism. It acknowledges that the researcher only can know the phenomenon through his interpretations of this phenomenon (interpretivist epistemology). The template is an expression of the researcher's interpretation. However, this template will be changed by the properties of this data, which are beyond the control of the researcher and thus places limits on what the final interpretations may be (realist ontology). Bracketing is also important in the process of coding. One practical way of ensuring bracketing was by including a category in the initial template called: "Things that seemed important but did not fit in any category". Having a

place to put things that did not fit my interpretation was a great help in becoming aware of my habitual interpretations and thus having the chance to set them aside.

The narrative structuring I created one-page learning journeys, summing up the main events for one individual participant from first meeting to last interview. This reduced the material to just sixty pages (one for each participant). I included the main quotes found during the coding in these learning journeys. From the Embodied Realism perspective, such learning journeys will be affected both by something beyond the control of the researcher and by the researchers own interpretations. On the one hand, how the interviewees described their process placed limits on what story I as a researcher could write (realist ontology). On the other hand, the interviewees' processes could only become known to me through the stories I constructed about these processes (interpretivist epistemology). To create data that could challenge my interpretations, I needed to bracket my own understanding and allow for the possibility of writing stories that did not fit with my initial interpretations. I needed to have a sense of discovering the stories, rather than having my ideas confirmed in the stories.

I then used the learning journeys to make the systematic comparisons prescribed by the Solomon Four Group design. This may seem more problematic in the light of my ontology and epistemology.

First, the comparison only makes sense if I can claim that the participants in a given group have something in common that is different from what the participants in another group have in common. However, if each participant selects their own problem, and these problems appear to the participant in terms of his or her own lived experience – which is likely to be different from every other participants' lived experience – in what way can I then claim that the ten participants in a given group have something in common? What participants in a given group do seem to have in common is the lived experience of the intervention used in that group. As will be seen in the following analysis, this study very much highlights the impact of how the lived experience of the intervention is later used to construe the problem in a new way. Thus, at least this finding may well be intimately connected to the epistemology chosen. I will return to this in the section on limitations.

Second, the Solomon Four Group design is created to find and distinguish effects of intervention(s) and test procedures. My chosen epistemology, that all objects of consciousness are construed in terms of a subject's lived experience, can be applied both to participants and

researcher. For participants, it means that any effects must be effects on how the participants used lived experience to construe their problem and what lived experience they use. Furthermore, it must mean that I as researcher construe my empirical data and findings in terms of lived experience. This is reflected in my research strategy, where I use theory I'm familiar with (formal and informal) to suggest possible codes. In other words, I bring many different kinds of lived experience to the data and investigate how doing this construes the data. The Solomon Four Group design leads me to search for lived experience that will construe the empirical data in a way that will bring forth distinct differences between the groups. As will become apparent in the analysis, my own experience of importing behaviour from seemingly unrelated areas of life to the context of the problematic situation, and my lived experience of dissolving judgments in this way became central to the way I ended up construing the findings.

3.1.7. Validity criteria

In interpretive studies, such as the present, it is important to define criteria for validity in relation to the ontological and epistemological assumptions the research is based upon (Sandberg, 2005).

Many authors have commented on how to produce valid knowledge claims in interpretive studies. For example, Creswell (2003, p. 196) lists eight strategies for obtaining valid knowledge claims in qualitative research:

1. Triangulation: Using several data sources to support findings.
2. Member-checking: Presenting findings and/or themes for participants to check if they find them to be accurate.
3. Rich, thick descriptions: Presenting data so the reader can get a feel for the researched situation.
4. Being transparent about researcher's bias: Since observation is necessarily theory laden, clarifying researcher's bias gives the reader the opportunity to contemplate the possible influence of this bias.
5. Presenting information that counters the claims to knowledge: It brings transparency to the presentation of the data, when the researcher discloses information that contradicts the researcher's proposed interpretations.
6. Spending time in the field: Through this the researcher can develop depth of understanding.

7. Peer debriefing: Explaining findings to other researchers, to test if the research makes sense to them.
8. External auditor: Having an external person, unfamiliar with the research, review the whole research.

However, some of these are based on an ontology and epistemology more related to positivism. For example, triangulation is based on the idea from navigation that the location of a point can be determined precisely if viewed from three angles. In this view, there is a correct location of the point independent of the viewer, and it can be known by getting sufficient and complementary data.

Sandberg has engaged with this problem by developing three kinds of validity claims based on the ideas of ontology and epistemology of three phenomenological thinkers: Husserl, Heidegger, and Derrida. I have chosen to use these in the present study.

1. Intentional fulfillment (Husserl) – communicative validity
2. Fulfillment in practice (Heidegger) – pragmatic validity
3. Indeterminate fulfillment (Derrida) – transgressive validity

Communicative validity: I took specific steps to achieve communicative validity, during data collection and during data analysis. I began each session with defining the problem the participant was going to talk about. Communicative validity in this phase means to establish "an understanding between researcher and research participants about what they are doing" (Sandberg, 2005, p. 54). To achieve this, I asked the participant questions about the problematic situation until we could agree upon a formulation of the problem in just one sentence. During the interviews, I asked for concrete examples for any claim proposed by the interviewee and pointed out everything in their presentation that did not make sense to me or appeared contradictory with other claims they had made. In this way, the interviews became common formulation of the interviewee's life world.

During the analysis, I used the principle of the hermeneutic circle to achieve an overall analysis that would be coherent. "The greater the number of parts of the empirical material that accord with a specific interpretation, the more coherent it is" (Sandberg, 2005, p. 55).

Finally, I presented my initial findings in seven talks to groups consisting of the participants, other professionals, and academics at Spinnerihallerne (one of the largest Danish development

and innovation centres), Mærsk, Copenhagen Business School, Danish Pedagogical University, Resonance (a Danish consultancy company), and Cranfield School of Management. In all seven talks I engaged the audience in dialogue. These dialogues helped me develop my analysis further. In particular around what structures the inclusion of art-based creation processes allowed in learning interventions, which were foreign to business professionals. Furthermore, throughout the entire research process, I have presented and discussed the research once a year with a panel of academics and presented it on several occasions at the so-called doctoral colloquiums for fellow students and faculty.

Pragmatic validity: "Pragmatic validity involves testing knowledge produced in action (Kvale, 1989)" (56). Again, asking for concrete examples is one way to check that the claims of the participants match what they actually do. Another way of attaining pragmatic validity is through participant observation. However, this was not possible for me to do with 60 managers all working in different companies across the country. A third way, is to use the knowledge developed in practice. This I did. During my analysis, I traveled extensively and taught a poetry movie lab, to dance classes on MBA programs (IEDC and Cranfield SoM), over 15 meditation retreats, and many dance classes. In every single class I tested my developing ideas about the use of art in learning environments. As it is customary to include reflective conversations in classes of contact improvisation, I could present and receive feedback on my ideas with the students. Even if the participants were generally not managers, these situations still offered me a space for reaching pragmatic validity.

Transgressive validity: Transgressive validity is obtained by realising the ways in which the knowledge produced is ambiguous, complex, and contains contradictions. This realisation helps the researcher become aware of own taken-for-granted assumptions. I worked with transgressive validity in three ways. First, I searched for alternative explanations. I did this by looking at the codes I ended up not using, and by testing whether the codes I did end up using were better explained by grouping participants in terms of demographic information, rather than which intervention participants had gone through. Second, I kept a log in which I noted down ambiguities and contradictions as I became aware of them. Third, I used MI and AI relating to my own study and practice. I used MI by being aware of my own findings as metaphorical in nature, i.e. that I used structure developed in cognitive metaphor theory to structure the learning processes I witnessed in the research, and that I did this in order to develop ways of supporting action. In other words, I see my research as development of an explanatory story that can

support the work with art in management education (and beyond?). I used AI by developing an awareness of the physical sensations I seemed to employ in my thinking and in my practice as a researcher. For example, I was aware how I sometimes represent contradictions and incoherence as muscular tensions (in particular a locking of the muscles that turn the upper spine close to the shoulders). This primary metaphor makes me experience contradictions as something unpleasant and gives me a sense of being locked or blocked, when I meet them. However, when I become aware of this primary metaphor, I can relax the muscles in question and the primary metaphor shifts. Then contradictions and incoherence seem to be represented by an inner sense of emptiness or blankness or openness. This primary metaphor gives me a pleasant sense of not knowing and of freedom (from the known?). When I represent contradictions and incoherence through this primary metaphor, I do not avoid it – finding it feels pleasant and even exciting. Leading meditation retreats gave me an excellent opportunity to practice this kind of awareness and it spilled over into my research activity.

3.2. Methodology in detail

My method was semi-structured interviews (Kvale, 1997) within the larger frame of Solomon's Four Group Design (Solomon, 1949). In this section, I describe in detail the methodological choices I made throughout the research process and relate them to the purpose of my research and my philosophical perspective. This includes a description of how I operationalised the key concepts from the theoretical lens I wish to use, to explore the learning processes facilitated by ABMs: Primary/complex metaphors, learning processes, simulations, and ways of engaging with the problem.

3.2.1. Inviting participants

I used snowballing (Denscombe, 2007: p.16) to find participants (description of sample in 4.1).

I wrote a PDF invitation (see 12.1) where I mentioned that the project was research into the use of art-based methods in management education. I noted the amount of time participants should expect to use, and that the benefit of participating would be a chance to engage with a self-selected problem and possibly obtain new insights and ways of dealing with the problem.

This PDF was sent out to all participants on CBS's (Copenhagen Business School) executive masters and to participants on DPU's (Danish Pedagogical University) programme LAICS

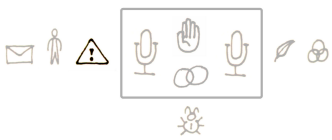
(leadership and innovation in complex systems). It was also posted in a number of LinkedIn groups for leaders in Denmark and sent out to people in my personal network who work as managers or have large networks of managers they could forward it to. Every time someone signed up for the project, I encouraged them to forward the invitation to anyone in their network they thought might be interested in participating.

Mentioning 'art' in the invitation may well have given me a sample of people who have a special interest in art and/or management education. However, the word 'art' also seemed to have a positive impact on getting participants to sign up. Several participants told me they signed up out of curiosity, simply because the project seemed different and new, compared to the kind of management education they were familiar with. I do not see this possible influence on the sample as a big problem because I will look at differences between participants going through different interventions. I'm aware that the differences I may find between groups with this particular sample may not be all the differences I could find, but they should still be valid differences that will help me answer my research question. I, therefore, chose to value the ability to attract participants through mentioning 'art' in the invitation higher than influences it may have on the makeup of the sample.

3.2.2. Selecting participants

Barsalou and Wiemer-Hastings (Barsalou & Wiemer-Hastings, 2005, p. 134) writes that: "If an abstract concept has no structure based on direct experience, the concrete metaphor would have nothing to map into". I therefore selected participants who had to be working as managers with at least three years experience. I defined managers as people who have others reporting to them, even though they might not have the formal employee responsibility, e.g. hiring, firing, negotiating contracts, etc. I rejected two participants on this basis. Furthermore, I only accepted participants who had to have a problem, which (at the beginning of the research project) appeared unsolvable to them and which they would encounter during the course of the experiment. In practice, all participants who signed up had such problems. Thus, no participants were excluded on this basis.

3.2.3. Important, unsolvable, and present – Selecting a problem



It is possible to study learning processes facilitated by art-based methods in many different contexts. I chose the context of *managers*

learning about a specific problem they currently faced in their work life which appeared important and unsolvable. I chose this context rather than, e.g., managers learning about abstract concepts such as visioning, improvisation, reflection, and inclusion (Cowan, 2007) or self-image and leadership (Taylor & Ladkin, 2009; Wicks & Rippin, 2010). The reason is, I wish to choose a context where I can explore the connection between simulations and interactions with the phenomenon simulated (i.e. behaviour). Having a concrete perceived problem at the core of the learning process makes it easier to explore what possible interactions with the problematic situation participants can imagine. It would be more difficult to explore how managers engage with phenomena, such as, visioning, improvisation, reflection, inclusion, self-image, and leadership in their work as managers.

Important: I asked the managers to select problems they found particularly important to secure their commitment. I did so by asking for problems that had impacts on bottom line, work climate, or other things they found highly important, which the managers had spent a long time trying to solve, but without the satisfactory results.

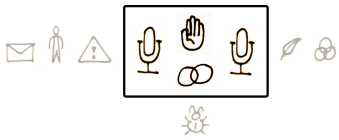
Unsolvable: I focused on problems that appeared 'unsolvable', not only to secure commitment, but also to make it easy to notice change, in that the appearance of any solution would be a sign of change. To find such unsolvable problems, I asked for problems that appeared mysterious, where their persistence appeared inexplicable, where everyone seemed to agree on common action, but for some unknown reason didn't follow through, or where thorough analysis of the situation had lead the manager to conclude that this problem was unsolvable and the best he could hope for was unsatisfactory compromises. To avoid priming participants in any specific direction, I did not use any concrete examples. Almost everyone had one or two problems that had jumped forward. Very few participants did not. For them, I asked them to tell me in detail what they do on a normal workday. This brought up relevant problems very quickly.

Current: Finally, I asked for problems the participants would encounter during the time of the research. This made it possible in the last interview to talk about whether the managers had *noticed* changes the way they experience and/or engage with the problem at work, rather than speculate whether this would be the case, should they encounter the problem.

To have participants select problems themselves made it necessary to meet everyone before any interventions. This is problematic in the Solomon Four Group design, as simply asking participants to formulate a problem clearly is arguably an intervention in itself. Thus, no group

was completely without pre-interviewing, which impairs the data's ability to challenge interpretations involving reasons for observed changes. However, the advantages seemed to outweigh the disadvantages, as it made it possible to engage managers' commitment, to ensure the problems were current and appeared important and unsolvable, and to formulate the problems in one sentence, which gave a 'tag line' that both participants and me as researcher could use to refer to the specific problem during the entire research process.

3.2.4. Creating sassy data – Solomon Four Group Design



I'm interested in exploring learning processes facilitated by two specific ABMs: AI, which works with primary metaphors, and MI, which works with complex metaphors. In particular, I'm interested in looking at the *outcomes* of AI and MI in terms of possible changes in the sensory and motor experience managers reactivate to represent a problem and how managers (consequently?) engage with this problem. I will later describe in concrete terms what I do to work with primary metaphors in AI and complex metaphors in MI and what I look for in interviews as evidence of changes in simulations and interactions in the interviews.

As mentioned in the literature review, a number of studies have looked at the *outcomes* of ABMs. Many have done this simply by interviewing participants. However, because the outcomes are learning and because any kind of testing methods through which a participant's learning is formulated, is likely to add to this learning. It is well known that being interviewed about a topic can generate substantial learning about this topic (Kvale, 1997). Thus, simply interviewing participants to determine what they have learned from a given intervention, will not generate data that is helpful in reflecting on what may have been learned in the ABMs, and what learning was added during the interviews. In other words, simply interviewing participants does not produce data that allows for the interrogation needed to answer this very important question. This limits the possibility to obtain transgressive validity.

One could think about using procedures other than interviews for collecting data about outcomes. However, in practice it is very difficult to imagine any procedure that would provide information about the sensory and motor experience managers reactivate to represent a problem and how managers (consequently?) engage with this problem, which would not potentially change these – like the interviews do.

Because I have chosen an abductive research approach, ideally reflexivity on any question should be taken back to the data. Therefore, it is crucial to create a design that enables me to use the data to challenge whether the outcomes I imagine are a result of the ABM is not, in fact, a result of the process through which such outcomes are formulated.

I, therefore, chose to (mis-)use Solomon Four group design, as this design enables me to pose challenges about whether outcomes are related to AI, MI, to the procedures used to gain information about the outcomes, to factors outside the research context, or simply to time passing. Reflexivity on such questions could be explored by reading through groups of interviews made in various groups and a various times, in relation to the interventions. I could ask questions like: Can I see similarities and differences between the ten interviews made after the MI intervention in G3 (group three), where interviews were also conducted before the MI intervention, and G4 (group four), where no interviews were conducted before the MI intervention? And do these similarities and differences tell me something about the impact of the interview on the outcome of the intervention? Thus, instead of using statistical methods to compare tests, I use the same system of comparisons to construct reflection exercises through which I develop my interpretation of the data.

The traditional Solomon Four Group design uses four groups as shown in the diagram below. By comparing different pre-tests and post-tests, it is possible to obtain information about the result of the testing procedure on its own, the effect of the testing procedure on the intervention, and the effect of factors external to the experimental setting. From an interpretivist view this translates into rich data that allow the researcher to thoroughly challenge his interpretations.

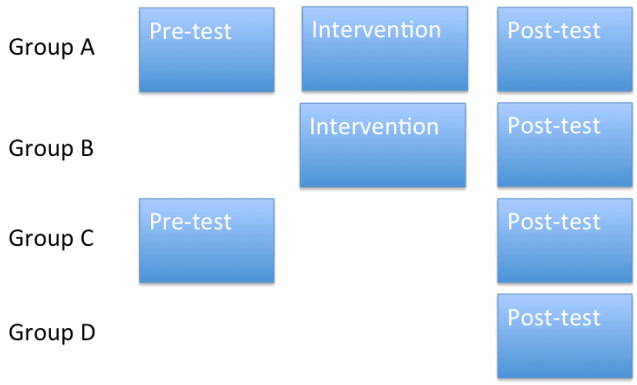


Figure 4: Traditional Solomon Four Group Design

I needed to make two modifications to this traditional design. 1) Because I had two interventions (AI and MI), I needed six, rather than four groups: Two groups for each intervention and two groups without any intervention. 2) To ensure commitment to the process and to ensure that participants would work on problems relevant to their current work life, I asked the participants to formulate the problems they wanted to work with themselves. This was done for all participants at the beginning of the research and is not a part of the traditional design. The second modification poses a significant problem, which I will return to in the next section.

The resulting design looks as follows (I have marked the original part of the design with a black square):

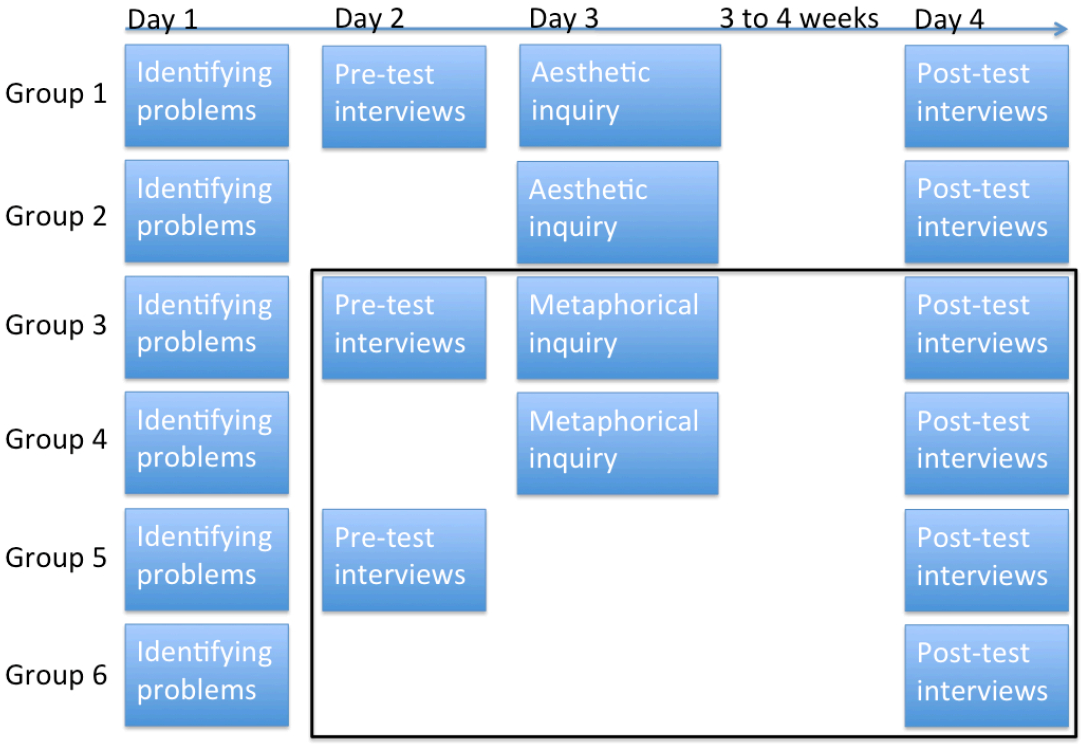
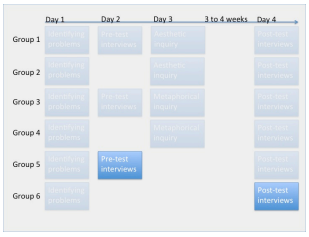


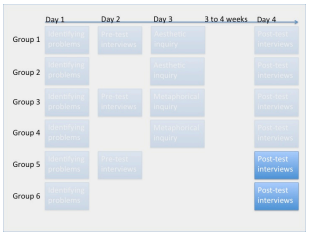
Figure 5: research design

Distinguishing between effects caused by AI, MI, the procedures used to gain information about the effects, and by simply time passing is done through five ways of comparing pre- and post-tests from different groups. Beneath, I briefly describe these. I will again point out that I understand these, not as tests revealing objective knowledge, but rather five ways of interrogating the data and challenging my interpretations of the data.

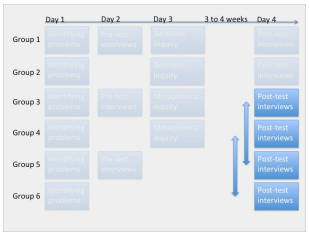
1. External factors and passage of time: G5 pre-test is done immediately after defining the problem and G6 post-test is done about one month after. Thus, comparing these tests will show what kinds of effects the passing of time may have on the test results.

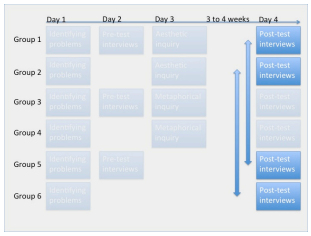


2. Pre-test effects independently of the intervention: These effects can be found by comparing G5 post-test and G6 post-test.

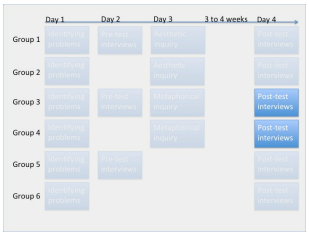


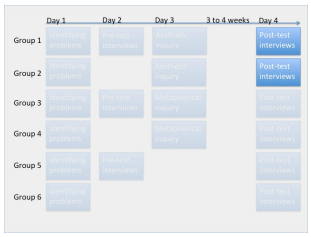
3. Pre-test effects when combined with an intervention: These effects can be found by looking at the differences between G3 and G5 (pre-test, with and without intervention) that are not also found in between G4 and G6 (no pre-test, with and without intervention). The same test can be carried out with G1 and G5 vs. G2 and G6.



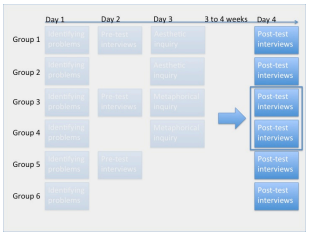


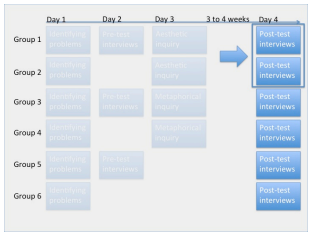
4. Pre-test effect on intervention: Further effects of the pre-test can be found by comparing G1 and G2 post-tests (for aesthetic inquiry) and G3 and G4 post-tests (for metaphorical inquiry)





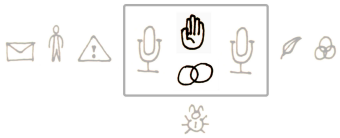
5. The effect of the intervention: Finally, the effects of the interventions can be found by comparing the post-tests of the two groups where the same intervention was used, with the post-tests of G5 and G6 and 'subtracting' all of the effects found in the four previous comparisons.





I use these comparisons to challenge my interpretation already in the process of developing my coding tree. I will return to this later in this chapter.

3.2.5. Two ABMs



I designed two art-based interventions. The main requirement for these two art-based interventions was that they would guide participants to use art-based media to work with either primary or complex metaphors. I called the method guiding participants to work with primary metaphors aesthetic inquiry (AI). I called the method guiding participants to work with complex metaphors metaphorical inquiry (MI).

I began both interventions with a short (5-10 min) guided relaxation. I did this in order to help the participants become more present, relaxed, and able to engage with the activities. In both, managers used three different art-based media (poetry, art photography, and abstract drawing) to explore self-selected problems they were currently facing in their work life. Both interventions ended by short presentations, where the participants would read their poem and make a few comments on poem, photos, and drawings. Both interventions took 3 hours in total. Interventions were done in groups of 1-5 participants. Most were done face to face. One intervention was done via Skype (P55 from G4).

Next I will describe the concrete steps in two interventions and how I operationalised the concepts of primary and complex metaphors in the research setting.

3.2.6. Working with primary metaphors – aesthetic inquiry

In aesthetic inquiry, the goal was to guide participants to use the art-based media to work with primary metaphors, i.e. the basic sensory-motor experiences they used to ground their problem in. I operationalised primary metaphors as

> *Sensory and motor experiences that are triggered in participants when they perceive or think of a phenomenon*

I especially focused on sensory and motor experiences that are not directly related to the physical properties of the phenomenon, as for abstract concepts, the sensory and motor experiences are more related to introspection than to the physicality of the phenomenon (Barsalou & Wiemer-Hastings, 2005). For example, when the sound of a word in an unknown language triggers a sensation of density, when a musical phrase triggers a sensation of reaching

out with the arms, when a picture triggers a sense of warmth, or when a problematic situation triggers a sensation of tension in the stomach or a sensation of having nothing to hold on to.

Preparation: Thus, to enable participants to work with primary metaphors, I needed to enable them to notice the sensory and motor experiences that are triggered by their problems and distinguish these from other elements in their moment-to-moment experience.

To do this, I first proposed that it is possible to focus either on the meaning of an experience or on the way this experience feels. This wording was not meant to be theoretically stringent, but rather to give participants a practical way of identifying the parts of their moment-to-moment experience that was an activation of primary metaphors. I continued by giving examples of how one could speak about a problem in terms of meaning (complex metaphors) and feeling (primary metaphors). For example, when speaking about what a problem means, one may state that solving it is important to the organisations mission, that it is in conflict with a colleague's personal agenda, that it is a Gordian knot, etc. Here the speaker uses complex metaphors, such as, mission, agenda, and the Greek myth of the Gordian knot to structure his experience of the problem. This language does not make visible the link to the primary metaphors used, i.e. to the actual sensory-motor experiences the speaker reactivates when thinking of the problem. For example, one cannot know what sensory-motor experience the speaker reactivates when thinking of missions, agendas, and Gordian knots. By contrast, when speaking about what a problem feels like, one may speak about the problem as heavy, dense, ungraspable, fluffy, fast, slow, etc. Throughout the intervention, I continually encouraged participants to continue their exploration of what the problem felt like, until they were able to describe it using words relating exclusively to sensory-motor experience. If, for example, the participants said their problem felt frustrating, I would say: "Good. Now tell me what this *frustration* feels like, physically". This would eventually lead the participant to notice the primary metaphors in which the concept of *frustration* (and through that the concept of their problem) was grounded. For *frustration*, these could be sensory experiences, such as, heat and touching a raspy texture.

To practice the ability to notice the primary metaphors, I took the participants through a number of exercises, where I asked them to describe the felt sense experiences that were triggered in them when they were exposed to various stimuli. I began with various pieces of music with different tempi, modi, and instrumentation and both vocal and instrumental music. I used R. Carlos Nakai's Canyon Trilogy, Mendelssohn Violin Concerto E Minor OP.64, and Ernie by Fat

Freddy's Drop. I used music, because in my experience it is generally easy for people to describe the sensory-motor experiences triggered in them by music. The participants would, for example, describe the opening movement of Mendelssohn's Violin Concerto as flowing, soft, dense, and stretching/reaching.

Because the participants would use photography and abstract drawing (two visual media), I included exercises aimed at practicing the ability to notice what primary metaphors visual impressions activated in participants. I presented participants for colour prints of famous paintings, both figurative and abstract. I used Pierre-Auguste Renoir's La Yole, Peter Paul Rubens' Samson and Delilah, John Constable's The Hay Wain, and Kazimir Malevich's Dynamic Suprematism. I asked participants to describe what sensory-motor experiences watching these paintings would trigger. Participants would, for example, describe Samson and Delilah by saying that the lower left part triggered a sense of warmth and density, that the upper right part triggered a sensation of coldness and low energy, that many shapes in the picture (not just Samson's muscles) seemed imbued with energy, and that they noticed a sensation of holding the breath. These primary metaphors could naturally both be triggered by the visual shapes themselves and by the stories the participants would see in the picture. Therefore, I also presented participants to a non-figurative painting by Malevich to give participants the experience of sensory-motor experience being triggered by shapes alone. For this picture, participants described sensations of tensions, movement, and balances.

Figure 6: Samson and Delilah (Rubens)

Figure 7: Dynamic Suprematism (Malevich)

Finally, because participants were also going to work with poetry, I included exercises aimed at making them notice the primary metaphors in which they grounded their understanding of *the sounds* of words. Words are challenging because they both have a *sound* and refer to a *concept*. In my experience people are likely to notice the concepts but not the sounds (unless it is particularly peculiar). However, the sound and the concepts of a word may well be grounded in different simulations. For example, the word 'chair' refers to the concept of 'chair'. The concept 'chair' is grounded in physical experiences relating to interactions with chairs, e.g., sitting in a chair, moving a chair, seeing various chairs, etc. The *sound* of the word 'chair', on the other hand, is grounded in experiences relating to this sound, e.g., hearing it, using the muscles in lips, tongue, and vocal chords to pronounce it, etc. To use words as an artistic medium (as in poetry), it seemed necessary that participants would at least be aware of the primary metaphors used to represent the sounds (not only the meanings) of words. To introduce this kind of awareness, I did the same exercise as above, but with words. First, I used words where the participants did not know the meaning. This made it easier for the participants to notice what sensory-motor experiences the sound (rather than the concept) of the word triggered in them. I used Russian words with different vowel sounds, consonants, and number of syllables, such as, far (далеко/delinko), quickly (быстро, bystra), street (улица, ulitza), and letter (письмо, pismo). Once the participants were able to answer what sensory-motor experiences the sound of these words triggered in them, I introduced words where the participants did know the meanings, but asked them to keep focusing on the sound. I used Danish words with different vowel sounds,

consonants, and number of syllables, such as, table (bord), cream (fløde), fun (spads), quirky (finurlig), and fast (hurtig). The participants would, for example, describe words with 'o' or 'u' vowels as darker, and words with 'a' or 'i' vowels as lighter. They would describe some words as soft and flowing and others as hard and even as triggering a sensation of being hit or hitting. Their descriptions would not necessarily coincide with the meaning of the words. For example, 'hurtig' (which means 'fast') would often be described as triggering a slow sensation – probably due to the outdrawn 'u' sound. This showed me that they did, in fact, focus on the sounds rather than the concepts.

All participants were able to produce descriptions of the sensory-motor experiences triggered in them by music, paintings and words.

Art-creation: Once this preparation was done, I asked the participants to engage in non-stop writing for 5 to 10 minutes to describe the sensory-motor experiences that thinking about their problem triggered in them. I particularly emphasised that it was not important to describe who was doing what, what the consequences of these actions were, or how they might solve their problem. This was done to raise the participants' awareness of the primary metaphors they used to represent their problems.

Next I guided them through a process where they created a poem, a number of photographs, and one abstract drawing that would trigger the same sensory-motor experiences in them. Thus, if the problem felt dark, sticky, and dense, they would create poetry, pictures, and drawings that would also trigger sensations of darkness, stickiness, and density in them. This way, their 'art works' would be focused on primary metaphors for the problem.

The instructions for this process were as follows:

For the poetry, I asked participants to pick out words from their non-stop writing, where both sound and concept related to their problem. I then asked them to write another non-stop text with outset in these words. Once again I asked them to pick out words from the new text. I then asked them to choose the 4-8 best words and create a list of words that rhymed on each of these. I showed them how to expand the number of words they could use for this by including non-perfect rhymes. Again the task was to find rhyming words, where both sounds and concepts matched their problem. Once the participants had their lists of rhyming words, I gave them 20 minutes to write a poem that would trigger the same sensory-motor sensations in them as the problem itself.

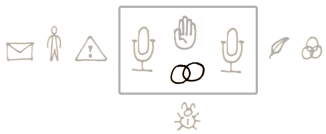
I then gave them digital cameras and asked them to take 10 minutes to walk around the campus and take pictures of things that would trigger the same sensory-motor experiences in them as the problem. Finally, I gave them blank papers and a selection of writing tools (pencils, ball point pens, and a brush pen) and gave them 10 minutes to create an abstract drawing that would trigger the same sensory-motor experiences in them as the problem. Many of the participants chose to make figurative drawings, rather than abstract ones.

These instructions aimed at guiding participants to use the art-based media to work with primary metaphors for the problems.

Presentation: At the end I asked each participant to read their poem and say a few words about their pictures and drawings. Afterward, I asked them what they found most interesting when they looked at their production. We did not reflect or try to draw conclusions or making any links back to the organisational problem. We only drew forth what was immediately interesting and left it there.

3.2.7. Working with complex metaphors – metaphorical inquiry

In metaphorical inquiry, the goal was to use the art-based media to work with complex metaphors for the problems. I operationalised complex metaphors as



> *Representations of the problem in terms of any domain of experience, familiar to the participant, other than the one in which they found their problem.*

For example, representing their problem as a dam blocking the flow of water, as a treasure hunt, as a court trial, as a night at the disco, etc.

Preparation: Enabling participants to work with complex metaphors was simpler than enabling them to work with primary metaphors, because the concept of metaphor is generally known. I began by doing a few warm-up exercise, in which I asked participants to select a place they knew well and describe it as a fruit, a famous movie/novel, a tradition, a place to sleep, etc. I did two more rounds of this exercise with an activity and with a person, respectively. Every time they answered, I would ask them what the metaphor highlighted about the place, activity, or person it described. For example, one participant described her apartment as a mango because it has a big stone, which reminded her of how her family took up a lot of space in the apartment. Another described her summerhouse as a bear, because both were a bit untamed and tranquil. A third

described the activity of cycling as a skyscraper because both were situated in the middle of the city and at the same time had a sense of being alone. A fourth described her spouse as never ending TV-series because both are very extensive/comprehensive. I then used their own examples to point out how different metaphors highlight different aspects of the phenomenon they represent. All participants in the relevant groups were able to produce such metaphors.

In the warm-up exercises, I deliberately never used sensory or motor experience as examples of domains the participants could use to create metaphors. I avoided this, in order to prime the participants to think in terms of complex, rather than primary, metaphors. However, the distinction was sometimes difficult to maintain. A few participants spontaneously used primary metaphors in their poems, pictures, and drawing – which I allowed to preserve the creative flow. Furthermore, since the foundation of complex metaphors is primary metaphors, the distinction was not easy to uphold. For example, participant 23 used the metaphor of a dam blocking the flow of water. Even though this is a complex metaphor, the underlying primary metaphor, i.e. the sensation of being held back, was very visible in the body movements of P23 when he spoke about this metaphor. I will return to this in the section on limitations.

Art-creation: After the warm-up, I guided the participants to write a poem, take pictures, and make a drawing. First, I asked the participants to use non-stop writing to generate as many metaphors for their problems as possible, using all the domains they could think of. For example, they could write that if my problem were a fruit, it would be this particular fruit because of this particular quality and then continue in the same manner, seeing their problem as sources of light, movies, animals, types of buildings, landscapes, etc. In parallel to the AI process, I asked participants to select a good metaphor from this text and continue with one more round of non-stop writing, using this metaphor as starting point. I then guided them through selecting words and generating lists of rhymes. This time, I asked that the words and rhymes would all relate to the selected metaphor. I then asked them to write a poem using the metaphor and the rhymes. Finally, I asked participants to take pictures of anything they felt could be a metaphor for their problem and draw a picture that could be a metaphor for their problem. Again, most participants chose to draw figurative drawings. Presentations were done as in MI.

I aimed at making AI and MI as similar as possible and only vary the way in which the art-based media were used. The similarity is illustrated in the table below.

Table 1: Aesthetic and metaphorical inquiry

	Aesthetic Inquiry	Metaphorical Inquiry
Restating the problem	Briefly describe your problem to the group	Briefly describe your problem to the group
Landing	Short guided relaxation	Short guided relaxation
Preparation	Describe the **sensory** part of the experience triggered by music, paintings, and words (using **sensory** words)	Describe a person, place, and activity **metaphorically** using different domains
Non-stop writing	Describe the **sensory** part of the experience triggered by the problem (using **sensory** words)	Describe the problem through **metaphors** from various domains
Focusing and checking process	Select most interesting **sensory** words and continue writing	Select most interesting **metaphor** and continue writing
Select words for poem	Select 4-8 of the **sensory** words from your text that trigger an experience with similar **sensory** qualities as the one triggered by the problem	Select 4-8 words from the **metaphor** domain in your texts above
Create rhyming scheme	Find words that rhyme with the selected words and have the same **sensory** qualities as the problem	Find words that rhyme with the selected words and fits within the **metaphor**
Write poem	Write a poem that evokes the same **sensory** qualities as the experience of the problem does	Write a poem that describes the problem in terms of the **metaphorical** domain
Create drawing and take pictures	Create a drawing and take pictures of objects that trigger an experience in you with same **sensory** qualities as the problem does	Create a drawing and take pictures of objects that can be a **metaphor** for the problem
Presentations	Present poem, drawing, and photographs for the group and talk about what you find most interesting when you look at your own works.	

3.2.8. Selection of art-based media

As mentioned, the art-based media I chose to work with were poetry, art photography, and abstract drawing. I chose these media because I wanted art-based media which the managers would feel as safe as possible working with. For many people it can be scary to feel incompetent. I therefore chose media where I could assume that the participants already had some basic skills that allowed them to feel competent in the *creation* process. For example, even if they had never written poetry, they still have skills in using language; and even if they had never taken art photography or made abstract drawings, they still knew how to use a camera and a pencil. By contrast, if I had chosen to work in media such as music or sculptures, a similar level of basic skill could not be expected. Furthermore, the process of *presenting* poetry, photography, and abstract drawing require a minimum of skills. Reading a poem or showing a photograph or a drawing takes less specialised skills than for example performing a piece of music, or performing a theatre or a dance piece.

3.2.9. Documenting the learning process

I am interested in exploring the learning processes facilitated by AI and MI through the particular theoretical lens of cognitive metaphor theory and simulation theory. I used semi-structured interviews to explore possible changes in the sensory and motor experience managers reactivate to represent a problem, and in how managers engage with this problem.

In a pilot study, I tested two other methods to evoke the information I needed besides interviews, namely, property generation (Wiemer-Hastings & Xu, 2005) and repertory grid (Kelly, 1963). However, I found that only the interviews were sufficiently flexible to capture the highly individual and often quite subtle changes in the simulations managers used to represent their problem, and in the way they could imagine engaging with it. Whereas the other methods did indicate when something changed, it was very difficult to know what had changed and what that meant. However, I also found that both property generation and repertory grid could be used as 'exercises' within the interview, as both surfaced rich material into which I could ask further questions.

It is important here to mention, that participants would learn a lot about their problem, simply by going through the interview process. Thus, I could not say that the interviews gave me a static picture of *simulations* and *ways of engaging* used by the participants at a given moment in time.

Rather, they gave me information about what managers were able to learn when speaking about their problem. In other words, I explored through the interviews, what kind of insights the managers were able to gain before and after the interventions when being interviewed about their problem.

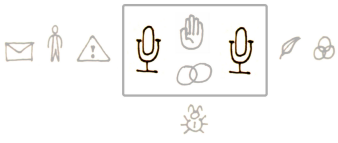
I, therefore, chose to use semi-structured interview combined with modified versions of these methods to explore the kind of changes I'm interested in. I will describe this below.

3.2.10. Documenting interviews

One can document interviews through audio or video recordings or through notes taken during or after the interview (Kvale, 1997, p. 161). I chose to use audio recordings of interviews and the presentations of art-work during the interventions. I used a Zoom H4 MP3 recorder. I chose not to use video recording, even though gestures and facial expression could directly show what motor experience is reactivated when speaking about the problem. To capture movements that seemed particularly important indications of how participants represented their problems, I simply mentioned these in the conversation. In this way, their presence was recorded on the audio and the participants had the opportunity to comment on my interpretation that these movements were relevant. Furthermore, I took notes after each interview in which I included my visual and energetic experience of the interviewee whenever I found this relevant.

Granted that video recordings would have enabled me to notice changes in the motor patterns when the participants spoke of their problem, I did not notice during the interviews. I estimated that what this could add to the analysis would not match the additional time I would have had to use analysing the video material. The added value/time ratio would be too small. Due to my research design, I collected a very extensive body of data (90 one-hour interviews corresponds to over 2500 pages of transcripts). To avoid the risk of creating a superficial analysis, it is important to select and focus on analysing the data with the highest density of information relevant to my research question (Kvale, 1997, p. 178). For these reasons, I chose audio recordings.

3.2.11. Interviews as a way to explore changes in simulations and actions



Kvale (1997, p. 178) writes: "The ideal interview is – to bring things to a head – already analysed when the recorder is turned off". By this he means that the interviewer must have a clear view of what topic the interview needs to illuminate. This allows the interviewer to interpret what the

interviewee's answers may say about the topic of interest and ask questions to have these interpretations verified, modified, or rejected in the course of the conversation. To be able to analyse while interviewing, it is important to operationalise the main concepts of these theories, i.e. to consider how these concepts can be visible in interviewee statements, and what questions I can ask to elicit these experiences, i.e. to construct an interview guide.

I have already operationalised 'primary' and 'complex' metaphors (see 3.2.6 and 3.2.7). In the following I will cover how I operationalised the concepts of 'simulations', 'ways of engaging with the problem', and 'learning processes'.

Simulations: I operationalised 'simulations' as the kind of lived experience participants referred to when speaking about their problem. To obtain this information it was important for me to consistently ask participants to provide concrete examples to illustrate any abstract claims about the problematic situation. For example, one participant stated that her employees did not understand that they were an important part of the organisation. I then asked her what she saw or heard that gave her this idea. She answered that the participants were nagging a lot. From this answer, I concluded that some of the simulations this participant uses to represent the problematic situation are the sensory experience of hearing (e.g. tone of voice) and seeing (e.g. facial expressions) another person nag. This may not be precise. The participant may, for example, only use reactivation in the auditory centre (tone of voice) and in the visual (not facial expressions). However, as will become visible in the analysis section, the reactivations often differed so radically, that even this fairly crude way of gaining information about which simulations the participants used, was useful for the purpose of the present study.

Ways of engaging with the problem: I operationalised 'changes in ways of engaging with the problem' as the kind of interactions participants were able to imagine on their own. I was therefore careful not to suggest any particular ways of engaging with the problem or asking about ways of engaging that the participants did not mention themselves. One could argue that even if participants could talk about a way of engaging, they might not necessarily be able to do this in the situation. Thus, this way of gaining information about how participants engaged with their problems is far from perfect. Direct observation of the managers in action would have been better, even if it would also have been beyond the capacity of one research to observe 60 managers for a month. However, in practice many of the participants did speak about ways of engaging with the problem in the post-interview, that they not only didn't mention in the pre-

interview, but also stated themselves that they had never thought about before. Thus, it was possible through interviews to get some degree of information about whether the managers learned to imagine new ways of engaging with the problem.

Learning processes: Finally, I operationalise 'learning processes' as the processes I was able to formulate in terms of Cognitive Metaphor Theory that would provide an underlying story, tying together the main events of participants' learning journeys. By main events I mean the changes in the simulations and ways of engaging with the problem – as defined above. This included insights participants explicitly stated that they found important; insights and events related to the research process participants kept referring back to (showing their importance to the participants).

I now describe the interview guide I used, including the exercises.

Interviews: I chose to use individual, one-hour, semi-structured interviews. Most interviews were done face to face. Some were done via Skype (8 pre-interviews - P3, 6, 20, 29, 39, 41, 42, 56; and 11 post-interviews - P2, 13, 20, 29, 38, 39, 40, 42, 49, 56, 57). Each interview consisted of four parts:

1. Summary
2. Semi-structured interview
3. Exercise I: Property generation task
4. Exercise II: Mapping and comparing stakeholders' interests

Summary: I began each interview with a summary of the process so far. In the pre-interviews, I asked participants to restate their problem. I made sure they mentioned both the tagline and a few of the major points from their description in the first meeting. In the post-interviews for G1-4, the summary would also include some important remarks about what the participant had found interesting about his own poem, drawing, and pictures. I prepared for these summaries by listening to the recordings of the participant process so far, immediately before each interview. The purpose of the summaries was to give the participant time to remember the problem and the process and make it present to them.

Semi-structured interview: Next, I would use 20-30 min interviewing them about the problem. My interview guide consisted of three research questions.

1. How do you experience the problem?

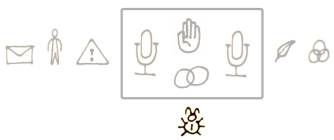
2. Which options for engaging with the problem do you see?
3. Is there anything else that you think is relevant?

The first question aimed at gathering information about what sensory experience the participant re-activated when thinking about the problem. The second question aimed at gathering information about how the participants were able to imagine engaging with the problem. The third question aimed at gathering information about elements that I had not predicted as relevant.

Exercise I: To further explore the learning process, I asked participants to spend two minutes making statements about the problematic situation they believed to be true. If they exceeded the time, I would not stop them. Afterward, I would ask follow-up questions to further clarify if they formulated new themes.

Exercise II: Lastly, I asked participants what people or groups of people they saw as having interests relating to the problematic situation, and what these interests were. I wrote these interests on flashcards. Then I presented the participant for these interests in sets of three (randomly selected) and asked them to compare these and tell me what they saw as similar between two that was different from the third. I continued doing this until the participant had either produced 10 distinctions or had used more than 20 minutes. For the last 2-3 sets of interests, I selected interests the participants seemed to perceive as very similar. I did this to reveal more subtle distinctions used by the participant. Finally, I showed the participants the list of distinctions they had produced and asked them which distinctions they thought were most interesting or relevant and why. I also asked them more openly to say whatever they felt like saying when they looked at the list. In the post-interviews in G1, G3, and G5 – where participants had already done this exercise once before – I start by going through the previous list of interests with them and ask if he had become aware of more interests, or if there were some of the identified interests he no longer saw as relevant. In the end I would show them both the new list of distinctions and the list created in the pre-interview and ask them to comment on both.

3.2.12. Dealing with confounding factors



It is possible to imagine a number of external factors beyond AI, MI and the interview procedures that may influence the sensory and motor experience participants reactivate, to represent their problems and how they can imagine engaging with this problem. First, participants'

understanding of their problem may change due to external encounters. The participants chose to work with problems they are highly motivated to deal with, and they would, therefore, naturally try to do so in many ways during the experiment. For example, they are likely to talk to colleagues, address the problem in their MBA projects, continuously test new actions at work, etc. Second, the participants' problematic situations may change radically during the time of the experiment, e.g., they may get a new CEO who redefines their tasks; they may get new resources for their projects, relieving their challenges; if the problem is connected to a certain person, this person may change jobs; the participants may get fired themselves; or they may simply take a week's holiday, relieve the stress, and clear their heads, which changes their view on the problem.

I have chosen to deal with all such factors through randomisation so these factors should impact each group equally. Furthermore, I kept a logbook, where I noted whenever the influence of such factors became apparent during interviews with a particular participant. And finally, the Solomon Four Group design, allows me to get a feeling of the kind of external events that might influence the participants.

3.2.13. Ethics

To ensure ethics I told participants the following at our first meeting:

- That all participation was voluntary and that they could leave the research at any time without needing to explain
- That the recorded material would be kept confidential and that cases would be presented anonymous, without their names and without their companies' names, both dissertation and subsequent publications.
- That if they had special concerns regarding confidentiality they could let me know and that I could set these interviews aside and transcribe them myself. A few participants did ask me to do this.

To ensure anonymity, the sections where participants presented themselves, their names, and company's names was deleted from the sound files before sending them to those who were helping me with the transcription.

3.2.14. Log book

I kept a log during the data collection. This log contained the following:

1. Notes on each participant's process – including my own perception of this process
2. Reflections on my practice as facilitator, e.g. the tension between my facilitator and researcher roles
3. Possible limitations of the research
4. Possible codes to be used in analysis.

The notes on each participant's process included demographic data, the tagline for the problem developed in first meeting, a summary of each meeting, a list of stakeholder interests and a list of the dimensions produced while comparing these interests. I also included notes on my own sense of what was happening for the participant. In making these notes, I drew on my experience as a therapist in tracking clients' inner processes. For example, I was aware that participants seemed to project shadow sides onto employees, or to use coping mechanisms, such as, splitting. I did not do anything with these observations apart from noting them. Neither did I take my observations to be 'truths'. Rather I used them as a source of inspiration for developing codes during the analysis.

I used the reflections on my role as facilitator in two ways.

First, they gave me continuously, ideas about the limitations of the research. I. Many of these limitations would have been difficult to remember after the data collection had ended. For example, when participants met me the first time to formulate their problems, they met me in small groups. I observed that they seemed to formulate very similar problems within these groups. I realised that I needed to consider whether this could have an impact on the final result.

Second, I used these ongoing reflections on my role as a facilitator to adjust the way I facilitated. I noted on several occasions a fatigue when I did too many workshops and interviews in one day. I therefore tried to get enough sleep, put in resting days, and include short meditations or relaxations between meetings, to keep my mind fresh and sharp. I also noted an ethical conflict between my role as facilitator and researcher. On several occasions I noted that the process came to a point where 'the right question' or sentence could have been very helpful to the participant, but doing this would have interfered with the research design. In the most severe of these cases, I chose to finish the research and then use 10-15 minutes after the last meeting to pick up this thread purely as a facilitator.

3.2.15. Transcribing interviews

The transcription was done partly by myself and partly by students. These students were not my students and not people I had any kind of personal relationship to. I paid them for the transcripts. To ensure quality and consistency in transcriptions done by different transcribers, I formulated some guidelines and sent a short section first. When I received a transcription of this section, I read through while listening to the recording. If necessary I sent back comments on the style and formatting of the text.

The interviews where participants expressed special concerns with confidentiality, I transcribed myself. I transcribed everything but did allow minor simplifications, such as, not transcribing 'ehm's' (unless they had obvious meaning), and aiming at more complete sentences.

When I received transcriptions from students, I listened to the recordings while reading the transcripts to check reliability of the transcriptions (Kvale, 1997, p. 164). I adjusted the transcripts when words had obviously been misheard. In these cases transcribers had often noted that the words were not pronounced well. I often remembered the passages as I listened to them, and therefore, preferred how I heard the words over how the transcribers had heard them.

3.2.16. Coding interviews using template analysis

Kvale (1997, p. 183) speaks of analysis of interviews as a reconstruction of the stories the interviewees tells the researcher into the story the researcher tells his audience. For this reconstruction process, I began coding using a simple template based on my work with literature. While I coded, I simultaneously proposed further coding categories and tested these categories.

I used two methods for developing new possible codes:

1. I read through the data and wrote memos to pick up anything that seemed to me to be relevant to the research question.
2. I wrote summaries of the learning journeys for each participant and grouped these

I used two methods to test the proposed categories against the data:

1. I tested new codes by seeing whether they became populated in the following coding

2. I further tested codes by summing codes used in each pre- and post-interview to see whether the codes could be used to make sense when I performed the comparisons prescribed in Solomon Four Group design

Initial template: I began coding with a simple five-category template, based on cognitive metaphor theory and simulation theories. The two first categories related to simulations and ways of engaging as operationalised above. For each, I had two sub categories to sort quotes pointing to changes, and quotes pointing to no change. Because my ultimate goal was to explore learning processes, I added two categories that could give me inspiration to formulate such processes: Participants' own explanations for any changes and what participants seemed to find interesting, i.e. what their attention gravitated towards, what they seemed to find important, or what they kept referring back to. Finally, to make my template open to pick up important material not predicted theory, I included a category for quotes that seemed important when I read them, but did not fit in any category already existing in the template.

1. Simulations: Changes in ways of perceiving the problematic situation
    a. Change: Quotes showing change in the experience participants referred to when speaking about their problems
    b. No change: Quotes when participants explicitly stated there was no change in how they experienced the problems
2. Behaviour: Changes in ways of engaging with the problematic situation
    a. Change: Quotes showing new ways of engaging
    b. No change: Quotes when participants explicitly stated they had no new ways of acting
3. Participants' own explanations of changes
4. What participants' attention gravitated to
5. Things that seemed important but did not fit in any category

3.2.17. Writing summaries of learning journeys

One challenge was how to make comparisons prescribed by Solomon 4G design, given that the 'tests' were one-hour interviews. I.e. how can one say anything about the differences and similarities between ten interviews made with one group of people and ten interviews made with another group of people?

I coded all interviews with one participant in chronological order, to get a feeling for this participant's learning journey. I also listened to the recording to pick up things that are not visible in the transcript, such as, tone of voice and timing of pauses. Once I finished coding all interviews with a particular participant, I wrote an empathetic summary of the learning journey, i.e. I tried to sense the changes as if they were my own experience. I restricted myself to one page. I included to the most important quotes. In this learning journey, I included a description of recurring and central metaphors used to describe the problem. See example of learning journey summary in Appendix 12.4.

3.2.18. Using the Solomon Four Group design to select relevant categories

I coded all participants in one group at a time. Once I finished a group, I would read through all learning journey summaries and write summaries of what had happened in this group's interviews. For the groups with interviews both before and after the intervention, I considered these separately. To sensitise myself to the effects of the interview procedure, I began with groups five and six, where no intervention had taken place. This way I would be familiar with at least some of the effects of the test-procedure, once I began coding the groups in which I had used AI and MI. This would help me be more sensitive to other effects, which might be related to the AI and MI.

I then used these summaries to make initial comparisons between pre- and post-interviews as prescribed in the Solomon Four Group design. Based on these comparisons, I found the coding categories, among all proposed coding categories, which best described the effects of AI, MI, and the test-procedures. I reduced my coding tree to just these (see section 5.1 for more detail):

1. Increased clarity
2. Import of behaviour
3. Dissolving judgments
    a. About own emotions
    b. About others behaviour

I then used this template to code, not the full interviews, but the learning journey summaries. Based on this second round of coding, I produced more detailed comparisons between groups, and did a systematic search for differences between participants that could account for these outcomes – other than which intervention they were exposed to.

4. Descriptive analysis

In this section, I describe the sample, and reflect on whether the groups of randomly assigned participants are, in fact, comparable. This makes it more likely that the effects found, reflect the interventions – not differences between the participants in different groups.

4.1. Description of the sample

60 managers participated in the research. All participants worked as managers in Denmark with minimum three years of experience. Both managers with and without formal staff responsibility were included.

The first five graphs below show averages and distributions of how long participants had been in their current position, how long they had worked as managers, how many employees they saw as reporting to them, and distributions of gender, and of public, private, and hybrid sector organisations.

The last graph shows distribution across industries. The sample represents a fairly broad range of educational backgrounds (from humanistic, to law, to engineering) and functions (administration, education, research and development, sales, IT, HR, law, etc.).

As is visible, not all variables are evenly distributed across groups. For example, in G3 all participants are women and G5 has more men than any other group. Similarly, G3 only has one participant from the public sector, whereas all other groups have between three and five participants from the public sector. In section 5.7.2, I will explore whether this may impact the result of the analysis.

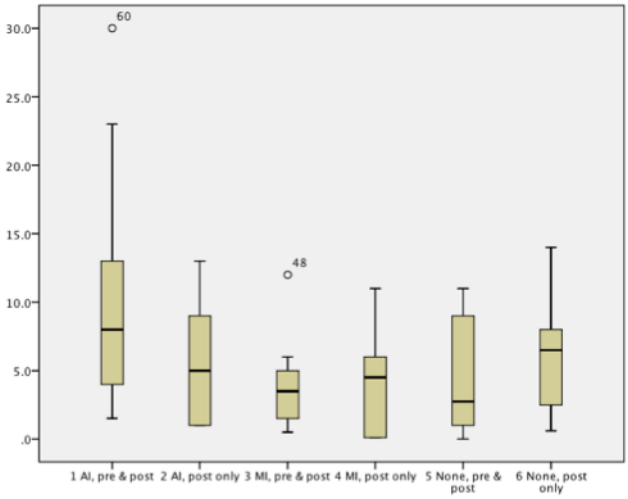


Figure 8: years in position

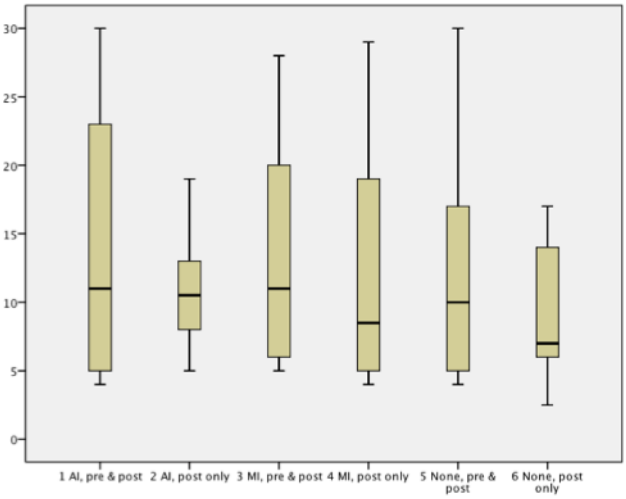


Figure 9: years in leadership

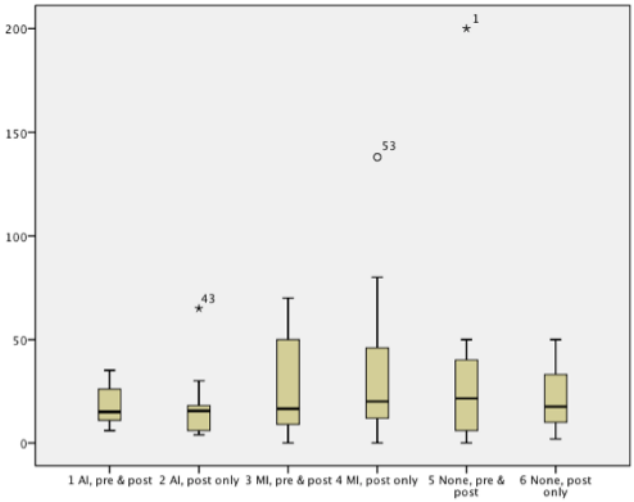
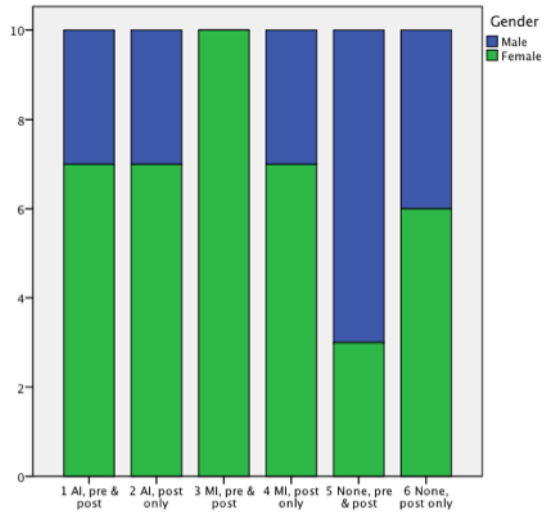


Figure 10: number of employees



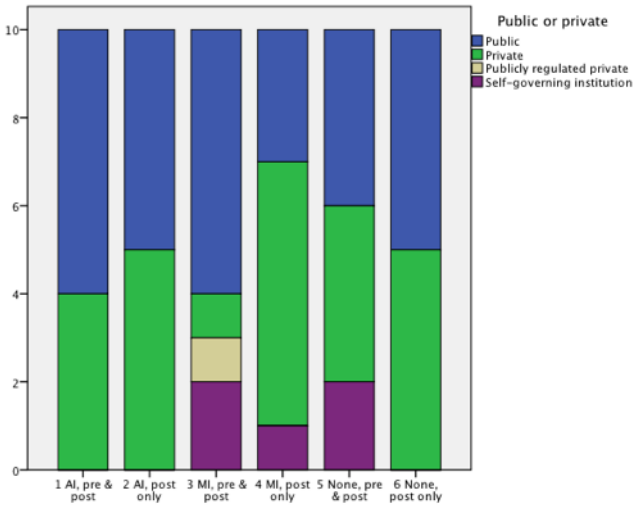


Figure 11: gender distribution in groups

Figure 12: public, private, and hybrid in groups

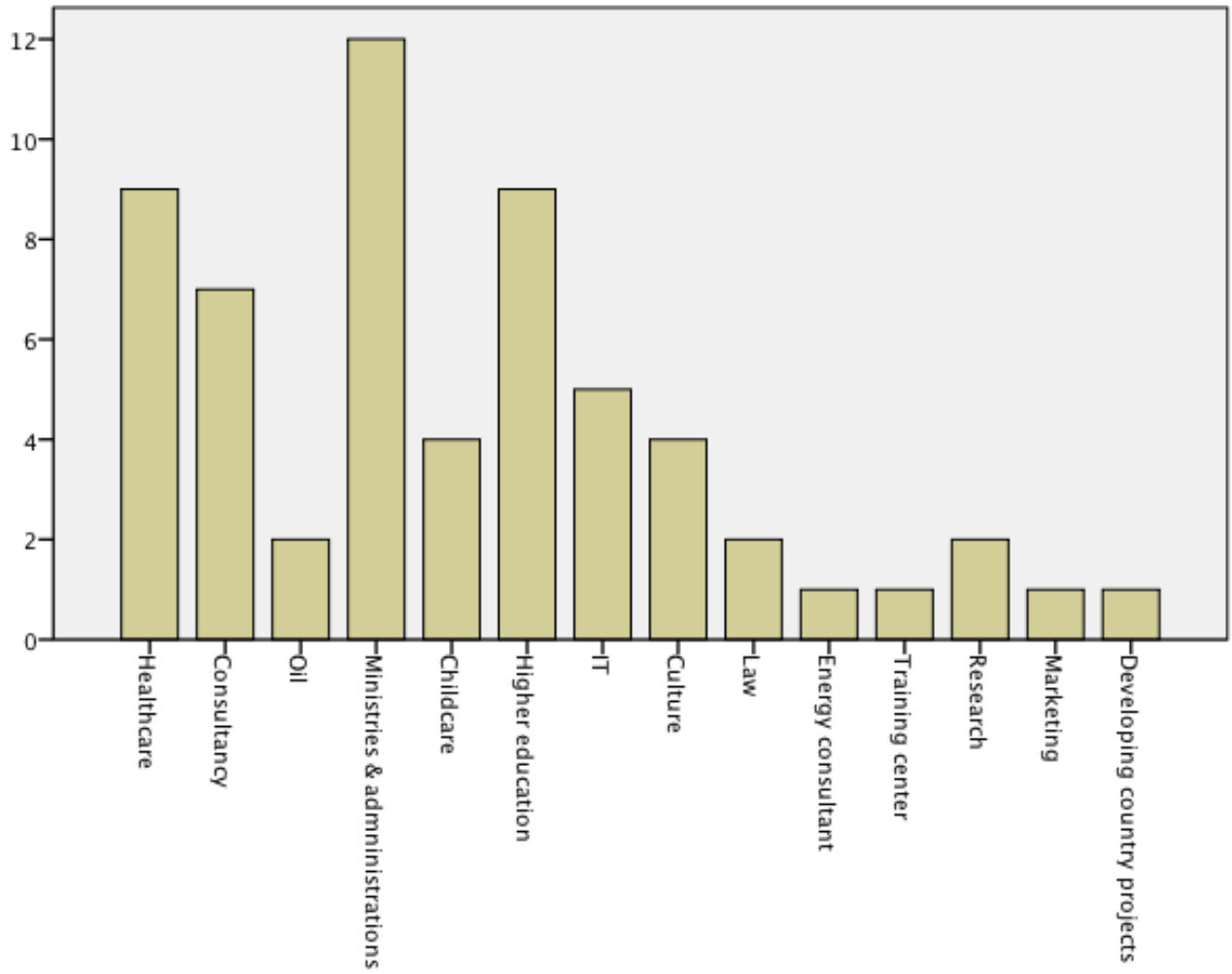
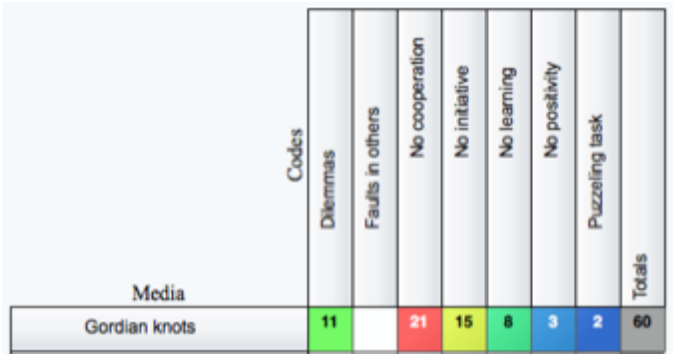


Figure 13: industries across full sample

4.2. Types of problems

Also the *types* of problems managers formulated during the first meeting also seem to be distributed evenly across groups. To test this, I grouped the 60 problems, according to what the managers saw as 'wrong' in the situation.

Table 2: types of Gordian knots



Media	Codes: Dilemmas	Faults in others	No cooperation	No initiative	No learning	No positivity	Puzzeling task	Totals
Gordian knots	11		21	15	8	3	2	60

In 47 cases, the managers formulated problems of the type: How can I change some (inappropriate) behaviours, attitudes, and perception in someone else? For example:

- P13: How can employees in customer service understand and feel that they are an important and valued part of the organisation?
- P27: How to make stressed nurses reflect on their own (stressful) work practice?
- P38: How to make employees understand what they need to do in a start-up organisation?
- P45: How do we stop the business unit in Kazakhstan from developing projects they (mistakenly) believe in, but Corporate believe will bring no ROI – and still maintain a good connection with them?

In these cases, any expressed desire to understand the roots of the unhelpful behaviour or attitude, is framed by the aim to find ways to change it. That there could be a valuable and legit motivation behind the seemingly destructive behaviour is not considered.

In 11 cases, the managers formulated problems as dilemmas. In these the managers also perceived a split between two incompatible elements, but instead of judging one element as good and the other as bad, the manager could see the value in both and, thus, their incompatibility became a problem. In these cases the manager understood his job as negotiating the mutual incompatibility. For example:

- P50: How can we keep the fire of internal motivation in (academic) employees and at the same time ensure that the projects that are important for the organisation are finished?

In some of these cases the dilemma comes from seeing one particular type of action as both positive and negative at the same time. Thus the manager is conflicted in how to obtain the good part without the bad part. For example:

- P43: How can I follow up on whether my employees are delivering without being controlling

In 2 cases the managers formulated problems as puzzling tasks. For example:

- P41: How can I create a position, as a leader, within an organisation in change? Where can I find the financing for this position? How can I test my idea for a new position?

As can be seen on the graphs below, these types of problems were also reasonably evenly distributed across the groups:

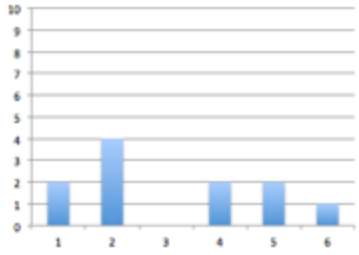


Figure 14: Dilemmas

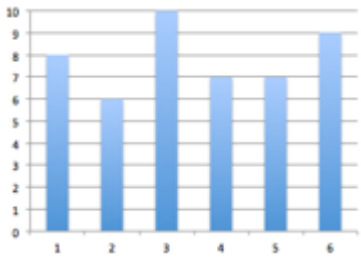


Figure 15: Faults in others

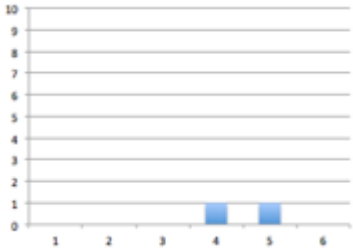


Figure 16: Puzzling tasks

I also tried grouping the problem formulations according to 'what/who needs to change' and 'whose interests are seen as important'. However, the problems were still evenly distributed across groups.

5. Conceptual analysis

In this section, I present a number of observations that emerged through the coding of the interviews and the Solomon Four Group comparisons. I started by making the comparisons that allow me to explore the effects of time passing and of the testing procedure. I then proceeded to make the comparisons that allow me to explore the effects of AI and MI.

The result of this analysis was that:

1. The test-procedure itself often produced *increased clarity*
2. MI often made participants realise that behaviour from contexts unrelated to the problematic situation was a useful way to engage with the problem (*import behaviour*)
3. AI often made participants drop negative judgments on either others' behaviour or on own emotions/viewpoints, which in turn opened up for new ways to engage with the problem (*removal of judgments*).

I then looked at the differences between participants in the MI groups (G3 & G4) who experienced import of behaviour and those who did not. This showed that import of behaviour mainly occurred when the complex metaphors participants used when speaking about their problematic situation through, before the MI intervention and the new complex metaphors they created during the MI intervention, were based on *different* primary metaphors.

I also looked at the difference between the participants in the AI groups (G1 & G2) who experienced removal of judgments and those who did not. This showed that removal of judgments occurred when participants managed to focus on experiencing their problem through primary metaphors, rather than complex metaphors based on these. When the participant did not use complex metaphors the sensory experiences used for the primary metaphors was not evaluated as good or bad.

The above findings extend Cognitive Metaphor Theory by formulating connections between learning outcomes and changes in primary and complex metaphors. For example, that complex metaphors based on similar primary metaphors can only support a limited range of behaviour and prejudice/judgment seems to be connected with complex metaphors, but not with primary metaphors. I will discuss this further in the contribution section.

The above findings further suggest that important parts of the participants' learning are intimately connected to the form of the learning interventions themselves. I.e. through creating

complex metaphors in the MI intervention, participants learned to connect previously unconnected domains of experience (importing behaviour) and through exploring the problematic situation through sensory experience in the AI intervention, participants learned to focus on sensory experience without evaluation/judgments (removal of judgments). The intimate connection between the learning outcomes and the experience of the learning intervention itself is further supported by a number of cases where participants ascribed their main learning to formal parts of their experience of the learning intervention, which were not intended to generate learning.

This connection between the experience of the learning intervention itself and learning outcomes, suggests that ABMs could be defined, not through typical learning outcomes or even typical learning processes, but rather through the kind of experiences the inclusion of art in the learning intervention enables. Including the kind of interactions participants may experience with each other, with the facilitator, and with their own moment-to-moment experience. This point can form the basis of a future research programme for ABMs. I will clarify this further in the contribution section.

Finally, in some cases participants applied what they had learned about the problematic situation to other situations, extending far beyond the problematic situation and beyond work related situations. This supports, that the experience of the learning intervention can become a tool for structuring other kinds of experiences, rather than mere data one can reflect upon, as suggested in the literature review.

I will now present the process of analysis through which I formulated the above findings.

5.1. Development of the coding template

I start by providing an overview of the process through which I formulated the coding template. I began with the coding template formulated from literature.

I then read through transcripts and developed a large number of categories. Finally, I made the comparisons in the Solomon Four Group design, and through this process, narrowed the categories down to three main categories, one of which had two sub categories. The purpose of this final coding template was to capture the differences between the effects the AI intervention, the MI intervention, and the interview procedure.

The initial coding template, based on literature, was:

1. Simulations: Changes in ways of perceiving the problematic situation
    a. Change
    b. No change
2. Behaviour: Changes in ways of engaging with the problematic situation
    a. Change
    b. No change
3. Participants' own explanations of changes
4. What participants' attention gravitated to
5. Things that seemed important but did not fit in any category

The last two categories ended up being empty, as everything I put in these categories was eventually relocated to one of the first three main categories.

The development of the three first categories into the final coding template is illustrated in the three figures below – one figure for each category. First column in each figure contains one category from the initial coding template. Second column contains the codes developed while reading the transcripts. Last column shows which codes were selected for the final coding template based on the Solomon Four Group comparisons. Thus, the kind of changes in ways of perceiving the problematic situation that stood out when performing the Solomon Four Group comparisons were: *Removal of judgments on self, Removal of judgments on others,* and *Increased clarity* (Figure 17). Similarly, the kind of change in behaviour that stood out was *Importing behaviour* from contexts not previously related to the problematic situations (Figure 18). None of the explanations participants supplied for any changes they experienced were particularly related to any group – except that participants (obviously) only referred to, e.g. free flow writing, in the groups where free flow writing had been used. Thus, none of the categories developed from participants' own explanations of changes were included in the final coding template (Figure 19).

As visible in the figures below a large number of categories were removed because they did not show any clear patterns related to groups. However, this does not mean that they are necessarily unrelated to ABMs. I reflect more upon these in Chapter 5.7. Two of the codes that were not used in the final template deserve special attention and are marked with italics in the figures below. When asked to explain the cause of learning, some participants referred to parts of the

experience of the learning intervention that were not intended to facilitate learning (Figure 19). This is discussed in detail in Chapter 5.6.1. When participants related what they had learned, some participants spoke about how they applied new ways of behaving in situations beyond the problematic situation (Figure 18). This is discussed in detail in Chapter 5.6.2.

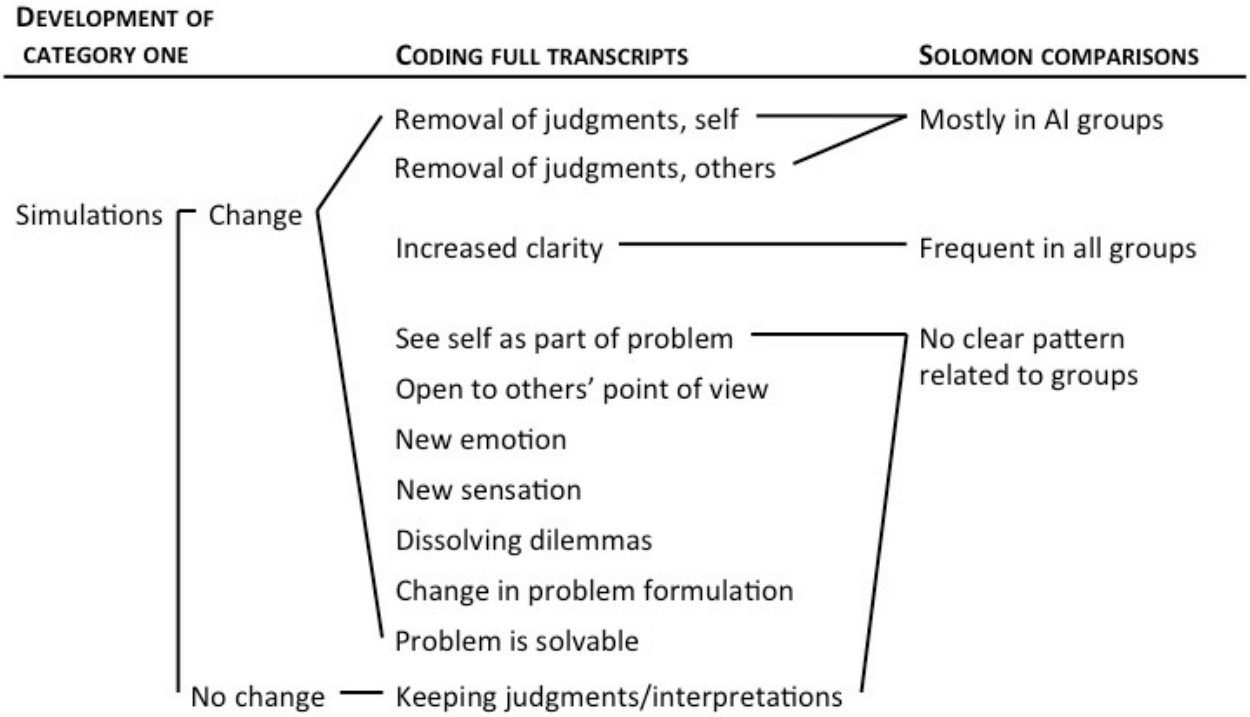


Figure 17: Development of coding category one

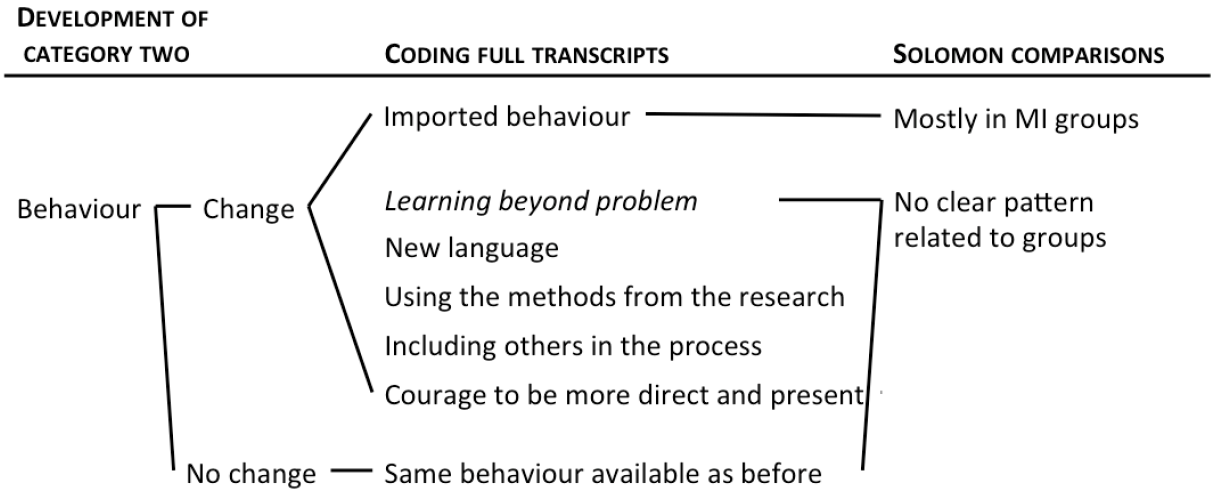


Figure 18: Development of coding category two

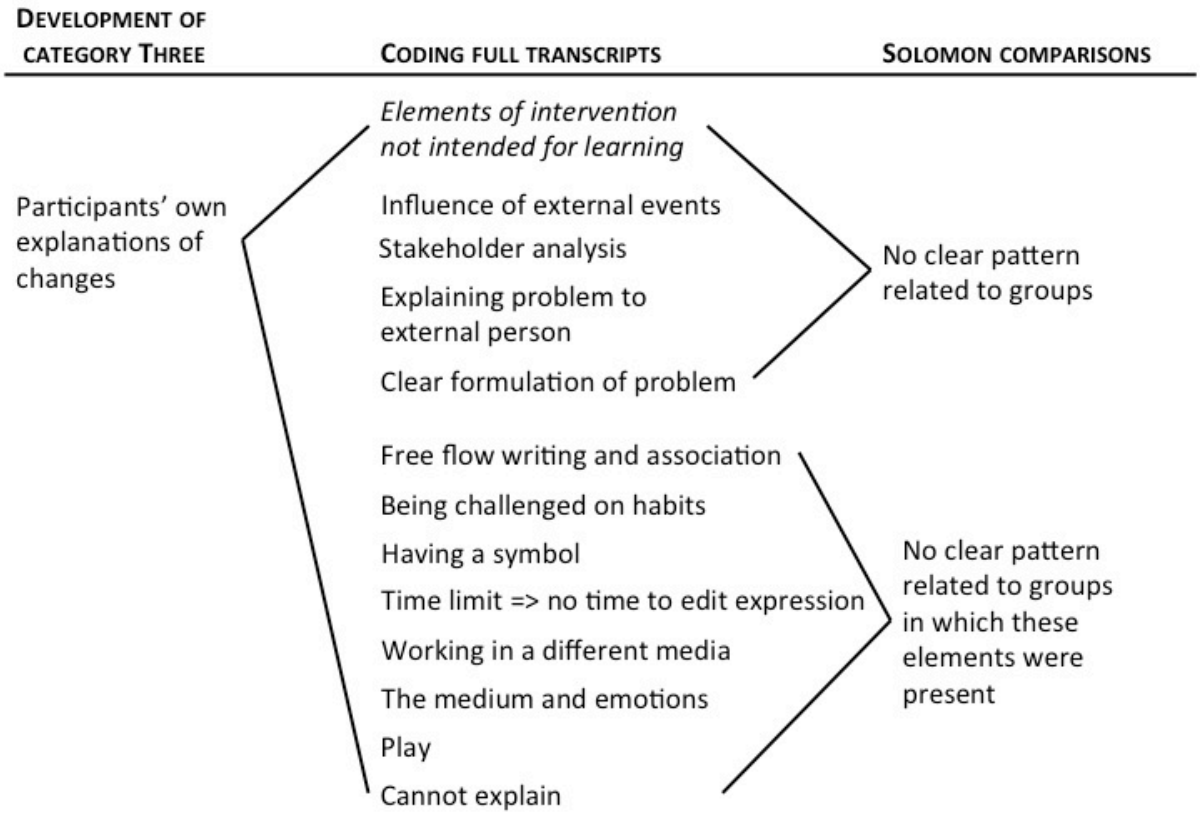


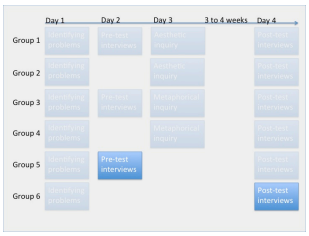
Figure 19: Development of coding category three

Thus the final template became:

1. Increased clarity
2. Imported behaviour
3. Removal of judgments
    a. Self
    b. Others

I now look at the comparisons leading to this template in detail and illustrate each category with examples from the data.

5.2. Effects of time and confounding factors



The only difference between G5 pre-interview and G6 post-interview is, that the first occurred immediately after formulating the problem and the other about one month after. Therefore, general differences between the 10 G5 pre-interviews and the 10 G6 post-interviews reveal what kind of effects the passage of time has on what kind of insights participants gain during the testing procedure.

In both tests, almost all participants expressed that they felt they obtained greater clarity about their problem. This perception was supported by their ability to give concrete details about the content of this clarity. I provide a number of examples of increased clarity in Chapter 5.3.4 below. Increased clarity appeared both in G5 pre-interview and in G6 post-interivew.

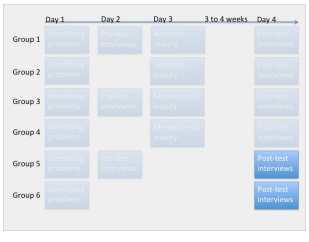
Two differences stand out. First, in G5 pre-interview, many participants found new concepts they became curious about. This did not happen in G6 post-interview. Second, in G6 post-interview some participants were more positive about their problem, due to events that had occurred in the time between formulating the problem and doing the post-interview – e.g. successful experiments with solutions, extra money was found, troublesome employees or colleagues got fired, etc. This did not occur in G5 pre-interview – simply because there was little time between formulating the problem and the pre-interviewing.

Thus, two effects of the passage of time were identified. First, participants' ability to see new interesting aspects in the situation seemed to lessen with time. Second, passing of time allowed for experimentation with solutions and/or organisational changes to occur, which made the situation less of a problem.

5.3. Effects of the test-procedure

In the following, I explore the effects of the test-procedure both independently of any intervention and in combination with MI and AI. I conclude that the most pervasive effect was a sense of achieving clarity by talking through the subject. In G5 and G6 where no ABM was used, it was primarily clarity of the participants' own point of view, making them better at arguing their case, or clarity about why the situation was hopeless. In G1-4 the clarity was primarily about what the ABM had meant to them.

5.3.1. Effects of the test-procedure independently of intervention



The only difference between G5 post-interview and G6 post-interview is that participants in G5 have been exposed to the pre-interivew and participants in G6 have not. Therefore, the general differences between the 10 G5 post-interviews and the 10 G6 post-interviews can illuminate what kind of effects, having gone through the pre-interview, have on what kind of insights participants gain during the post-interview procedure.

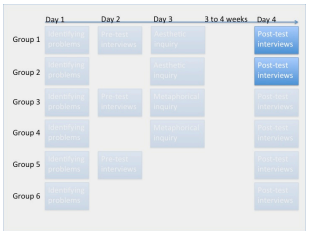
In both tests, participants experienced increased clarity and the effects of time discussed above.

The tests were different in that the clarity formulated in the G5 pre-interivews seemed to be amplified in the G5 post-interviews. Thus,those who obtained more clarity on how to argue their own case had become even more certain about their current viewpoint and strategies for engaging with the problem. Similarly, those who had opened to others' viewpoints had found more details relating to this new understanding.

For example, in the pre-interview, P32 took an interest in personality differences as the source of her difficulties in working with her two bosses. In the post-interview this had led her to the conclusion that she had to leave her position. In the pre-interview, P35 realised that the new organisation he had started working in was much more mature than his previous organisation. This eased his worries about learning to fit into the culture. In the post-interview he was even more convinced that he would get to necessary support to adapt. In the pre-interview, P40 was worried about whether the organisation he worked in would keep its values of inclusiveness, accessibility, and trust, in spite of a substantial growth through a recent merger. In the post-interview, he had obtained greater clarity about these values and why he believed they were important. This clarity also gives him a sense that he could argue for these values without including an economical angle, but purely from a value angle.

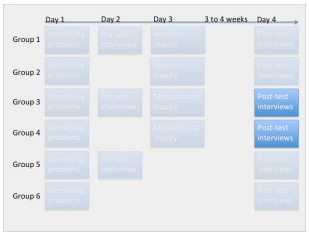
Thus the main effect of the pre-interview on the post-interview seemed to be, that whatever was realised in the pre-interview was amplified in the post-interview. In other words, the pre-interview may frame the following exploration of the problem, by focusing it on particular themes.

5.3.2. Effects of pre-interview in combination with interventions



The only difference between G1 post-interview and G2 post-interview is that participants in G1 have been exposed to the pre-interview before the AI intervention and participants in G2 have not. Therefore, the general differences between the 10 G1 post-interviews and the 10 G2 post-interviews can illuminate what kind of effects the pre-interview has on what kind of insights participants gain during the post-interview procedure when combined with AI.

In the same manner, comparing the G3 post-interview and G4 post-interview can reveal effects specific to the pre-interview when combined with the MI intervention on what insights participants have in the post-interview.



I did not find clear evidence for any effects of the pre-interview when combined with either AI or MI beyond the effects found in the comparison above between G5 post-interview and G6 post-interview. Reading through the material gave me a hunch that the pre-interview might frame the intervention in a way that on one hand limits its potential, and on the other hand makes people feel more safe and able to understand the purpose of the intervention. This could be an area for future research.

5.3.3. Increased clarity

The increased clarity occurred in all groups. This supports the assumption, that this is an effect of the test-procedure – rather than of the interventions. Below, I will describe, in detail, an example of a participant developing increased clarity. At the end of the section, I will summarise various ways in which other participants described increased clarity in a less detailed way.

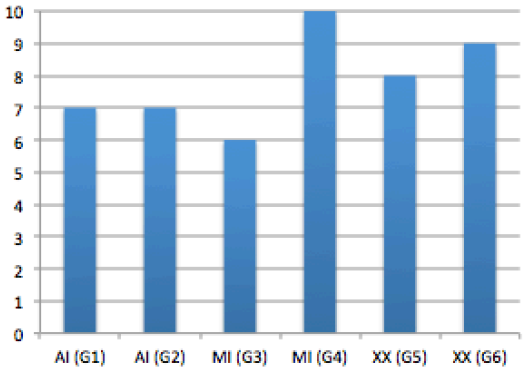


Figure 20: Increased clarity across groups

5.3.4. Example of Increased clarity

P3's problem was:

> *How to keep morale up among employees, without offering extra pay or influence on choosing their own tasks.*

In the pre-interview, P3 (G5) described his problem as low morale amongst the employees with lowest educational levels. He saw that this group of employees complained a lot, often behind his back, and sometimes fabricated lies about the management. This problem was amplified by a number of factors. He explained:

> *"We have bad economy. There are limited resources for competence development…. The ways of politicians are mysterious… we get tasks forced down our throats that not all in the*

organisation agree that we should solve… the motivation to give a little extra after four o'clock because it is necessary does not come on its own. It is something one has to strongly encourage" (22 00.00).

He believed the solution was to stop complaining about things you cannot change and start being positive:

"What one needs to do is focus on what gives added value to the organisation…. The more positive energy you can add to your organisation, the better problem solving you will have. All the rest, one should not focus on (interviewer: And what is all the rest that one should not focus on?) That is complaints about the new reality. That needs to be fought, or processed – fought is not a nice word" (26 00.00).

In the post-interivew P3 described the problem in very similar terms:

"Less resources and much more top-down process… Someone has realised that this is how society looks at the moment and has chosen to say, it is no use to be angry…. but we'd like to have some explanations why… Some employees have realised that it is no use to complain and have turned and become 'ok, now we need to get started'. Others have become worse… primarily amongst the lowest educated. And in one case it has come so far that we have reached the phase called letting go… we have planned some seminars… [about] the underlying reasons: Why can you not do anything about it? It's because you don't have any more resources." (42 00.10).

His solution was basically the same, but had become a bit more concrete:

"I have begun, in collaboration with union representatives and other employees to – not divide, but articulate – colleagues in three categories: the ones who want (to work), and want (to support) the system, and want to go the right way in relation to the way we have to go. Those we will do anything for… the ones who come to work from eight to four and get a check at the end of the month. They get treated correctly… Those who do not want the system and do not want to work, and do not live up to our – not demands, but missions… and if they do not want these things and work against them all the time, then we do not want them either" (42 06.24).

At the end of the post-interview, I asked directly what motivation the employees, which P3 saw as un-cooperative, could possibly have for not cooperating. To this he reiterated that people with

low education in today's society seemed to be more focused on what they could demand, than on what they could give. He could give no further insights into motivation behind this.

The above can be interpreted as indicating that throughout the process, P3 primarily developed clarity about his own point of view – and the point of view of the un-cooperative employees seemed to remain a 'black box'. He did not see any new ways of engaging with the situation, but he felt he had narrowed down which of his options were useful and he seemed more set in his way of arguing his case.

This was also true of other participants: When clarity developed on its own, i.e. without any of the two other learning outcomes, it was often clarity about one's own point of view. For some, like above, the increased clarity of their own point of view seemed to make them more determined in pursuing their current line of action (P3/G5, P38/G2).

> "I don't think the problem has changed noticeably… where I have become a bit more decisive is maybe that I structure the workday a bit more hardcore. So they (the 'troublesome' employees) get a slightly more explained version of what it is that needs to be understood" (P38, 41, 00.00)

Sometimes pursuing their current line of action included finding new ways of arguing their viewpoint (P40/G5, P56/G5, P10/G6, P52/G6)

> "I think that conversation gave clarity over what I believe… and I also become clearer that it is not just a question of some obsolete hippie thing I, due to my age, am stuck with. It is something people in modern organisations and in modern education should think about. And I get more and more convinced … that it is possible to argue for this, in a way that people with 'administrative logics' can be sympathetic towards" (P40, 41, 01.29)

…or finding new groups of people they should include in their efforts (i.e. also push their viewpoint onto) (P16/G6).

> "Right now I'm thinking – and it is just a here-and-now thought – that there has been a lot of focus on leaders and colleagues, and now I'm also concerned with that those damn employees also need to be involved" (P16, 49, 00.42)

For others, clarity seemed make the *unsolvable* nature of the problem crystal clear. Some seemed to react with a sense of resignation (P2/G6):

> "I think it is more this about simplification of key aspects… I don't say there is a solution, because there isn't, but it is much more concrete" (P2/G6, 49, 00.05)

Others decided to get out of the situation by either firing employees they saw as the root of the unsolvable problem (P3/G5, P24/G1, P33/G4):

> "It's people we care about and with whom we have collaborated for many years and there is nothing wrong with the competences they have, it just doesn't fit… it's become clear for us that it is something else we want" (P33/G4, 41, 03.28)

Yet others decided to resign from the work position containing the unsolvable problem (P21/G1, P7/G4, P32/G5):

> "It has been difficult to talk about it without sounding very complaining…. Either it has been my own fault or it has been the fault of everybody else… I have, literally, put everything on the table and seen it at a distance and understood relations and interests, so that I better can see it and understand it and navigate in it – or in relation to it, 'cause I now want to move myself away from it" (P32, 46, 03.00)

In all of these cases, the managers seemed to develop clarity within the frame of their current metaphorical understanding. These managers used the same metaphors in post-interviews that they had used when first presenting their problems (i.e. in the problem formulation for G6 and in pre-interview for G5).

None of the participants on G6 experienced import of behaviour removal of judgments – supporting that these effects are related to the art-based interventions rather than the interview procedure. However, three participants in G5 (P18/G5, P26/G5, P41/G5) did experience import of behaviour and removal of judgments. Since I argue that these are effects of the art-based interventions and no art-based intervention was used in G5, these cases are particularly interesting.

5.3.5. Participants in G5 and G6 who experienced import of behaviour and removal of judgments

Three participants in the G5 experienced removal of judgment and/or import of behaviour – without going through any art-based intervention. In all three cases, the participants changed the metaphor through which they structured the problem. In all three cases, the source domain for this new metaphor was part of the experience of the *actual learning intervention*, i.e. the interview process.

P41 was a manager in a large educational institution that was merging with another large educational institution. P41 had a clear idea about how to create a new and interesting position for himself in the new merged organisation. However, he was in doubt whether there would be money for this position after a few years, and therefore whether he should put his energy into building up this position. After he had explained his problem in the pre-interview, I summed up what I had heard to validate my understanding. In doing so, I asked if I had understood the problem correctly, that he had a clear idea about a position that he wanted, but that he did not know how to *test* whether this position would be supported by the organisation in the long run. Using the word *test* became central to P41's learning. P41 had never before thought that he could try to actively *test* whether there would be support for the new position in the long run. Instead, he had thought he needed to *figure out* it out through careful observation and analysis of the situation. In the post-interview, P41 said that he had *tested* the level of organisational support for his ideas by speaking to his boss about them. P41 related this new behaviour directly to the use of the word *test:*

> "Since we are using the word 'test' it hangs together with the conversation [the pre-interview] (interviewer: Because that was where we began speaking about *testing*?) Yes… that is right. So I believe that this thing about testing some things and doing some things, relates to the way we have spoken together" (P41, 49, 01.04)

Thus, a small part of the experience of the concrete learning intervention (namely my use of the word *test*) triggered a change of the metaphor P41 used to structure the problematic situation through, from *something to be figured out* to *something to be tested*.

P26 was manager in a software development company. One of his best employees had psychological problems that made it difficult for him to come to work every day, work in groups, finish projects, and keep deadlines. However, he was also able to solve problems much faster than anyone else and to produce amazing programming code. P26's problem was how to deal with this employee, since, as he phrased it, he had no 'or else' he could use to force the employee to finish projects, he no longer wanted to work on because he had lost interest. The pre-interview, in particular the analysis of stakeholder interests, made it clear to P26 that the employee was very motivated by appreciation of his work. Furthermore, P26 discovered that he could use dialogue and meetings, not only to communicate information about the task, but also as

a way to give attention, show appreciation, and help the employee not get stuck in details that he didn't need to solve.

> "With communication one can achieve a lot… he had made this thing yesterday and was super happy and wanted to show it to one after the other… and it's very impressive and interesting, but he needed the acknowledgement and, eh, it is a motivation factor for him – he gets it also through communication" (P26, 42, 06.49)

In the post-interview, P26 said that based on these realisations, he had set up weekly meetings with the employee. P26 thought that this worked very well and he no longer experienced the need for having an 'or else' he could threaten the employee with, to make him finish projects on time.

> "I have sat up some meetings where we just talk project management... He's got 20 hours normally, but it's sometimes difficult for him to get up for these. I would like that he comes… but without an 'or else'. Just sensible. Just talk like normal people. And he has done so, so far… He came yesterday and had made something I had not imagined could be finished before a month from now, or something like that. He has gotten much more enthusiastic about doing some things, so… But it's this thing that I have turned my role a bit upside down and, well, it seems so simple (interviewer: How do you see your role changed from what to what?) Like, changed about how I should be for him. I also speak more openly about his disease… I try to talk to him about how I see the world and there is no 'or else'. There were no threats in it and I said we were satisfied with his work and now we needed to move on… well, it was very standard things but on a human level… I think I went a step further in relationship to what I normally see as my work role " (P26, 42, 00.00)

P26 identifies the conversation during the group session where the problem was initially formulated and during the pre-interview as trigger for the changes described above. As is visible from the quote below, P26 himself felt privileged to be part of the research conversation, and thus, felt on his own body how conversation can be much more than a simple passing on of information – which he previously thought.

> "I think it has been extremely interesting, both to hear the others and to think these things through. It is not because you have been teaching really. You have just used some, eh, simple things and I think that is extremely interesting. I have become aware that it is important to talk

things through, not just let them be. I feel privileged to be allowed to be part of this" (P26, 42, 13.55)

As in the previous example, a part of the experience of the concrete learning experience, namely using communication to talk things through, triggered a change in the metaphor P26 used to understand *communication.* Instead of seeing communication as a means of transferring information, he began to see it as a means of giving appreciation and motivation.

P18 was manager for a community place for people with psychological problems. His problem was how to implement the political agenda of user inclusion when the users have psychological problems that make them unable to participate in meetings and express what they want. He believed the user inclusion was of utmost importance. He also believed that if he (or the employees) initiates activities in order to ensure manageable projects, then user inclusion would be 'just a word' and would cover up their manipulation. He saw the situation as very black and white. The good was to be idealistic and give users complete freedom to initiate the projects they wanted to initiate. The bad was to place limits on what users could do to ensure that the projects would be manageable. He spoke about idealism vs. pragmatism.

Throughout the process he came to acknowledge that there could be some practical value in initiating projects that the users could then influence. He softened his judgment of this as fake, pretend user inclusion.

"It's possible for me to accept it a little… It makes me a little less afraid of being pragmatic" (P18, 46, 01.43)

In our conversation, we touched upon how P18's parents had given him very free limits – and that he consequently had missed them and felt that they were not present. This made him consider that giving space could also be a form of abandoning and that taking initiative could be being present rather than taking control and invalidating any promise of influence. Thus, his view became more nuanced and less black and white and he even considered the benefits of mixing them.

"I think, maybe, if user inclusion creates happiness or is good for people, then this ultimate user inclusion does not necessarily create happiness. Because it is frustrating. Because it is much too free and much too… whereas user inclusion within a frame creates happiness, or makes people more satisfied. And then it is not pure user inclusion but user inclusion and

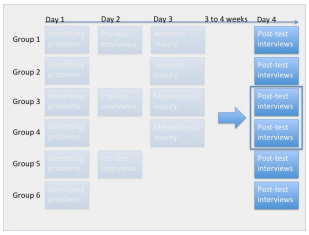
life quality, kind of, that is important. I mix because then… user inclusion is part of something else, and not on its own. It cannot stand completely on its own" (P18, 42, 29.00)

Interestingly enough, an interview is simultaneously very directed by the interviewer and very open for the contributions of the interviewee. At the same time the interview is a place where others' views are seen in detail and understood with more nuance. Thus, P18's change from the black and white view of very good idealism vs. bad pragmatism to a more nuanced view of pros and cons of each of these views and the possibility to mix them, mirrors the concrete experience of the learning intervention.

These three cases support that the experience of the actual learning intervention was used as a tool to structure other experiences, i.e. that the participants began to see their problematic situation in terms of (parts of) the experience of the learning intervention. Thus, making this experience a tool for structuring other experiences, rather than mere data to reflect upon.

5.4. Effect of MI

Effects made more likely by MI can be found by comparing the 20 post-interviews of G3 and G4 where MI was used, with the 40 post-interviews of G1 and G2 where AI was used and G5 and G6 where no intervention was used.



5.4.1. *Importing behaviour from different context*

Participants in the MI groups were more likely, than participants in the other groups, to find new ways of engaging with their problem by *importing behaviour* they knew from a context unrelated to the context of the problem. 9 participants in G3 and G4 experienced this and only 4 in G1 and G2 and 2 in G5 and G6.

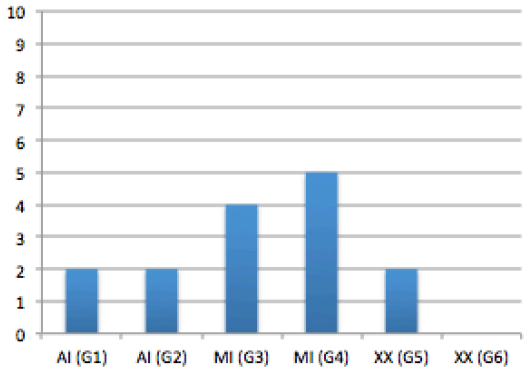


Figure 21: Import of behaviour across groups

When comparing the cases where this learning outcome did occur with the cases where it did not occur, it became apparent that it occurred in the cases where participants formulated new complex metaphors for their problems that were based on different primary metaphors.

Furthermore, in one particularly interesting case (P4/G4), the new metaphor the participant formulated in the post-interview had no relation to the metaphor he formulated during the MI intervention. Instead he used the MI intervention itself as source domain for developing understanding of his collaboration with colleagues in the work place. I return to this example in section 5.6.1.

5.4.2. Example of importing behaviour from different context

In this section, I recount in detail an example of 'importing behaviour'. P49's (G3) problem was:

> *How can we get a commitment to decisions in the leader group, given that there are members with very different ideas about what leadership is (control vs. delegation)?*

P49 was one of five department leaders in a public sector organisation. She found that there was no commitment to the decisions they made in the management team. The other managers agreed to decisions in their meetings, but did not act on them afterwards. The main expression she used in the pre-interview to describe this was lack of "fælles fodslag" (common ground). Literally, "fælles fodslag" translates as common "beat of the feet". Thus, the sense of doing something together is seen in terms of coordinated movement. Furthermore, P49 saw internal communication in the management team as limited, due to individual agendas:

> *"Some may ensure themselves more influence by – consciously or unconsciously – withholding information… We are very much pillars, the four departments… one thinks one's own department before the organisation" (P49, 21, 00.00).*

During the pre-interview she realised that she, and especially one of the other department managers seemed to have radically different ideas about the role of management. To her, management included giving employees autonomy and challenging the decisions politicians asked the organisation to carry out if her professional expertise found it necessary. P49 believed that her college thought management was about controlling employees and carrying out the political orders without questions and without errors. She realised her colleague probably did act on the common decisions, but framed the decisions in a very different understanding of management – thus rendering the implementation of the decisions unrecognisable to her.

> *"We sometimes find it difficult to make things work and maybe also to have trust in each other because we come from some completely different places – but these things we never talk about. We talk about the concrete problem, but we do not get under what are the*

different basic attitudes that makes it difficult for us to find common ground (fælles fodslag)" (P49, 24, 00.59).

This insight is an example of what I call increased clarity, however no new behaviour was imported during the pre-interview and no judgments were removed. She still judged her colleague negatively, even if the content of the judgment changed slightly from her colleague not being loyal toward decisions in the management team, to her colleague carrying out the decisions in a 'flawed' way, due to her 'flawed' idea of management as control and carrying out orders without challenging people higher in the system.

In the pre-interview, P49 used metaphors based on the primary metaphors, where she saw the problematic situation in terms of uncoordinated movement. She saw her own and her colleagues ideas of management in terms of contrasting points of departure, resulting in contrasting destinations.

During the MI intervention, she created various metaphors for the situation that all revolved around contrasts and uncoordinated movements – like those she used in the pre-interview. She wrote a poem in which she saw the problematic situation in terms of an uncoordinated orchestra performance (uncoordinated movement). Furthermore, she used various forms of sensory contrasts as metaphor for relation between her own and her colleagues' way of leading. For example, she used a monotonous march by Händel as metaphors for her colleague's controlling approach to leading and contrasted it with music by Prokofiev as a metaphor for her own delegating approach to leading*:*

"It does not sound good in our choir. One is too small and a too big.
We often work around the same table, but everything is not quite what we think.
When one plays mother, and one plays earth – in the shoe, there's sort of a thorn.
There is a dissonance in our song. No common sing-along.
Do we have different range, when it ends in a bang?
Or just each of our cue, to get started and create hullabaloo.
Maybe we should just say 'hello', take each his cello – and not just be good – alone, or in twos.
Now we lead through control. We paint a smooth watercolor – in colors, all pastels. A monotonous march of Händel.
We should dare something creative and crooked, as Prokofiev,

Then we could go with soul and life to lead, create respect and idea and common sound without yells and squeaks" (P49, 36, 00.00)

In her pictures, P49 used trains moving in opposite directions as metaphor for the situation. This complex metaphor incorporates both primary metaphors of the situation as uncoordinated motion and two leadership styles as contrasting. She also used a black and white graphic print as metaphor for the relationship between her and her colleague's leadership styles.

"That was the problem. Just being alone instead of walking in a common group" (P49, 36, 01.35)

However, one picture made a particular big impression on P49. This was the only picture she remembered in the post-interview. It was a picture of a scarf left on a bench. This came to represent the experience of *loneliness* of the problematic situation. Considering this aspect was new for her:

"It could be something about going in different directions, but it also looks a bit lonely. So, in fact, it is something about when one does not have this common commitment, then everyone stands a bit lonely. And this I hadn't thought of" (P49, 36, 05.24).

In the post-interview, P49 had developed this insight further. Her perception of the situation had changed, which (among other things) was visible in that her emotional response to her colleague changed:

"In a way it is a bit sad. Maybe more than being angry… then why is there someone who does that? Why is there someone who thinks she needs to keep things to herself? Maybe that person is not happy with it either… it is again this thing about trying to see things from a different side than your own" (P49, 41, 16.10).

Using the picture of a scarf left on a bench as a metaphor for the problematic situation is based on a primary metaphor P49 had not previously used. Instead of seeing the problematic situation in terms of uncoordinated movement and contrasting ideas about leadership, she now saw it in terms of isolation, i.e. lack of physical contact.

After having introduced this new metaphor, P49 realised that the problematic situation was not simply a question of *lack of commitment to common decisions*, but even more so it was a question of *lack of relationships* between the managers in the management team (48 00.00). With this new

perception, she remembered that she did a lot of things to create good relationships among her employees as a way of making them work better together. And she realised that the behaviour she used to create relationships in her team of employees could also be applied to the leader group she was a part of.

Thus, when P49 created a complex metaphor (the lonely scarf) for the problematic situation that was based on a primary metaphor she had not previously used (common commitment as physical connectedness rather than coordinated movement) she realised that behaviour she used in a different domain (managing her employees) was applicable to the problematic situation. The new complex metaphors she created during the MI intervention that were based on the same primary metaphors she already used in the pre-interview (e.g. trains moving in opposite directions or an uncoordinated orchestra performance both based on common commitment as coordinated movement) did not have a great impact. Even if they were new metaphors, she could barely remember them in the post-interview.

5.4.3. Distinguishing between 'new behaviour' and imported 'behaviour'

Some participants imported behaviour from context that had nothing to do with their work, whereas others did not change the way they engaged with the problem at all. In between these poles, there were a number of participants who did change behaviour, but this behaviour came from contexts that were more or less close to the context of the problem. I now describe how I distinguished between 'imported behaviour' and other kinds of new behaviour.

In the category *imported behaviour,* I placed new behaviour that was imported 1) from contexts outside work, 2) from work contexts where the participant had a different role, and 3) behaviour that was not from any particular context, but where the applicability of this particular behaviour was *surprising* to the participant. I did not include participants who modified their behaviour by simply using a different tool in the toolbox, which they already associated with the problematic situation.

From context outside work: Some participants began to use behaviour from contexts outside of work: P15 used her way of dealing with anger in love relationships to deal with her anger towards employees, P20 used his way of being visible at social gatherings to being visible as a leader, P55 used her way of dealing with garden planning to deal with changing employees' job functions, and P4 used the way he had experience working with art-based media to collaborate better with 'difficult' colleagues.

No change: Some participants did not change behaviour at all. P21 was a very clear example. He tried to persuade his boss to make IT investments by explaining to him the risks of not investing in new equipment, but found that the boss either didn't understand or didn't care. This situation remained unchanged – even though his boss changed during the time of the research!

In between these two clear categories was a grey zone. I dealt with this in the following way.

From a different work role: Other participants began to use behaviour they normally used in a work context where they have a different role than the one they have in the context of the problem. As mentioned, P49 began to use behaviour from the context of working with her own team of employees (role of manager) to the context of working with the management team (role of colleague in a management team). Similarly, P14 began to use behaviour she knew from her role as leader in the context of being a consultant and P12 began to use playful behaviour she knew from product development in the context of marketing and selling those products.

Surprising behaviour: A number of participants began using behaviour that was unfamiliar and/or surprising for them to use in the context: P26 began using *regular meetings* as a way of giving acknowledgement and motivating a particularly skilled and difficult specialist employee. He had never thought of meetings as a means for anything other than passing on information and he usually thought about money and 'or else…' threats as means of motivating. P41 began testing his ideas about where the organisation might be going through directly asking, instead of observing and drawing inferences. P46 began using silence instead of giving her opinion. P13 began talking to the department boss instead of the employees to heighten employees' moral. P19 let go of control in a context in which he normally looked for ways to obtain control.

Changes of behaviour I did not categorise as imported from another context: A number of participants did change their behaviour, but the new behaviour was neither surprising to them, nor unfamiliar in the context of the problem. Some participants changed their 'target audience'. For example, P17 was trying to push another manager to make sure that an employee (lawyer) would finish a document. Already during the problem formulation she realised that this document was more about communication than about law and that she, therefore, could write it herself – which she then did. Thus, P17's behaviour changed during the course of the research, but the new behaviours, i.e., influencing people through their manager and taking on tasks herself, were unfamiliar or surprising ways of dealing with the problematic situation for P17.

P6 had a problem with the middle managers in one of two institutions she managed. According to P6, these middle managers did not implement the directions she gave them in their institution. At the beginning of the research, P6 saw this as disloyalty and as resistance to change. During the workshop she changed her view. Instead of seeing them as disloyal, she saw them as lacking competence and authority toward the employees. She also changed in that she thought it was the employees, not the managers, who were resisting change. She changed her behaviour from trying to control the managers closely, to supporting them in building up leadership skills and authority. However, these new behaviours were not unfamiliar or surprising tools for P6 to apply in the problematic situation.

P24 changed his behaviour from trying to negotiate with an employee who did not live up to his expectations to firing her. In all of these examples, the way of engaging with the problem did change. However, I did not categorise the new behaviours as 'imported behaviour' because they were neither from a context outside work life, from a work context in which the participant had a different role, or surprising/unfamiliar behaviours for the participant to use in the problematic situation.

5.4.4. Participants in G3 and G4 who did not import behaviour

To understand this further, I compared the changes in complex and primary metaphors that were visible to the participants who imported behaviour from a different context and those who did not. Seven participants in G3 and five participants in G4 did not import behaviour. The metaphors these twelve participants created during the MI, and later used in the post-interviews, were based on the same primary metaphors they used when they initially formulated their problem. When metaphors are used in this way, they reveal the (sometimes unconsciously) structures participants use to structure the situation, thus bringing a sense of increased clarity. However, different complex metaphors based on the same primary metaphors seemed to enable the same, or very similar, kinds of behaviour. Therefore, no new behaviour was imported in these cases.

For example, P6/G3's was a manager for a nursery and a day care centre. These were located in two separate buildings 50 km apart. In the pre-interview, P6 described her vision of a larger integration between these two institutions. She wanted them to work to perceive themselves as *one* institution. However, she thought the managers resisted this change and that she had to push them. Her metaphor was a picture of a sculpture that consisted of two parts, which almost fitted

together but not quite. Thus, pushing together things that did not quite fit and thus resisted being pushed together was the primary metaphor underlying various complex metaphors P6 used both in the pre-interview and the MI intervention.

During the MI intervention and in the post-interview, P6 shifted from thinking that it was a matter of managers resisting change to a matter of incompetent managers who couldn't deal with their *employees* resisting change. However, the primary metaphors of pushing together things that resist being pushed together remained the same throughout the entire process. And even though P6's behaviour did change from pushing (disloyal) managers, to helping (incompetent) managers push the employees, no unfamiliar or surprising behaviour was imported.

Similarly, P7/G4 had been given the task of first persuading employees to help build software that would eventually automate the function they had – and then fire these employees. From an organisational point of view this made perfect sense to her, but she found it deeply immoral. When she explained her problem she spoke about justice and fear of being judged by either the board or the general public. Her drawing was one of Justitia (the Roman goddess of justice). Even if the primary metaphors are not clearly visible from the data, the complex metaphors used, essentially stay the same. So it is reasonable to assume that the drawing of Justitia and the way she spoke about being judged by either by the board or the general public in the pre-interview, can be seen as complex metaphors based on the same primary metaphors.

During the process, P7 realized that the problem touched her profoundly, because it was a 'relational problem' – not merely a 'frustrating operational problem'. This realisation falls into the category 'increased clarity'. However, she kept seeing the situation as one in which she would either be judged for carrying out someone else's immoral decision, or judged for not carrying out her job. Thus, she obtained clarity about why she felt the way she felt, and about how she (unconsciously) structured the problem. In the post-interview she considered leaving her job, forming a consultancy company and bringing the employees she should have fired with her – so that her current organisation could pay for the knowledge they needed to build the software. This cause of action was part of P7's considerations all the way through the process and, thus, not a case of imported behaviour.

In short, the ten participants from G3 and G4 where MI was used, who didn't import behaviour, all kept the same primary metaphors at the foundation of any complex metaphor they used, to see the problematic situation through. Whereas this (as in the cases of P6 and P7) often gave

increased clarity and thus helped them choose how to engage with the problem, it did not make radically new behaviours available to the participants. In short, it could only help them choose among the tools they already knew, but not help them create new tools. This is particularly problematic when dealing with problems the managers perceive as unsolvable, as they, in these case, do not have any tools that give them satisfactory results.

In the table below, I have summarised the ten learning journeys from G3 and G4 where new behaviour was not imported.

Table 3: Learning journeys for G3 where behaviour was imported

P	Metaphor	Learning
6/3	Metaphor is used to illustrate what is wrong with the managers: Sculpture that almost fits together = the managers don't see the two places as one institution	Finding solutions for how to get the managers to do what she wants them to do. Change from: they lack loyalty to they lack authority/competency
17/3	She used flirting at a disco as a metaphor for the political games in the organisation.	She felt the main learning was in clearly formulating the problem and, thus, understanding that being nice came at the price of not prioritising the strategically most important project.
25/3	She introduces a seesaw metaphor (need to get things in balance). She asks the question in the poem: What should who let go of. She let go of a mother metaphor – getting employees to stay by nurturing them. And of her engagement with professional discourse – focusing on setting frames and leading.	She needs to let go of professional interesting conversations and focus on economy and other managerial topics.
30/3	Where people spread and gather. Not sure what this metaphor is used for	She starts demanding action and focus on what she can do, rather than on what she thinks the org. should do. But the underlying framing of her boss' boss as a lying person stays the same
48/3	Flowers and growth conditions. Seems to be a representation she is already using.	She obtains more clarity around what individual motivations might be and clears wrong assumptions. But the framing is on fixing the employees.
54/3	The projects are like going through the jungle without a clear path	The goal needs to be clearer. She focuses on what she needs to do for the employees
7/4	She will be judged for her actions and doing her task is morally wrong, not doing it is rationally wrong. It is impossible to win. The metaphor explains her current perception	The frame of her needing to find a way to avoid judgment is kept. No new actions are found. But the relational nature of the problem is highlighted (it is not primarily operational)

23/4	His boss is seen as a damn that blocks the creative flow (he stops him for political reasons – his success has made him a threat)	No new actions are found. Interestingly enough, the metaphor is used inconsistently. He sees his boss as a blocking dam, and himself as a protective dam.
33/4	The waiting room metaphor gives rise to the question: What are we waiting for (and the answer: Nothing). The metaphor describes the current sensation.	She keeps seeing the employees as mistreating her. Before she kept them for the sake of stability, now she fires them. No new action was introduced, but the choice of action shifted.
47/4	Butterfly metaphor. But strange engagement in the process. Talked a lot and explained herself. Seemed scattered.	She kept searching for ways to push (motivate) employees and kept seeing them as slow/dragging. During the workshop she saw that she was unwilling to change too fast too – but this disappeared before post-interview.
53/4	Too many chefs in the kitchen. Describes current understanding.	She keeps framing the situation as a dilemma between stepping on someone or leaving an inefficient structure in place.

5.4.5. Types of change in metaphors during MI

In the MI groups, more participants imported behaviour from different contexts than in the other groups. However, it was still only eight out of twenty participants in G3 and G4 who imported behaviour. This suggests that creating new complex metaphors is, in itself, not sufficient to elicit this effect.

To explore when the MI intervention led to import of behaviour, I compared the changes in metaphors for the participants in the MI groups who imported new behaviour and those who did not. This showed that a new complex metaphor seemed to be most likely to facilitate import of behaviour when this new complex metaphor was based on primary metaphors the participant did not already use before the MI intervention.

Thus, I categorised the changes in metaphors the participants used before and after the MI intervention. I categorised these changes as (theoretically, there are more possible combinations, but these were the ones that occurred):

1. Increased focus on primary metaphors
2. Different complex metaphors based on different primary metaphors
3. Different complex metaphor where underlying primary metaphors could neither be observed nor inferred (Not clear)
4. Different complex metaphors based on same primary metaphor
5. Same complex metaphor (and thus same primary metaphors)

There are a number of difficulties in carrying out this categorisation. In the following, I define how I dealt with the three most prominent difficulties: Distinguishing between metaphorical and literal descriptions, which of the multitude of metaphors used should form the basis of the categorisation, and how to assess whether or not new complex metaphors are based on the same or different primary metaphors, if the latter are not visible in the data.

1. Metaphorical vs. literal descriptions: There is the question of which descriptions of the problem, their own role, or others' behaviour, should be seen as metaphorical and which should be seen as literal. For example, when P14 described her own role as that of Gandalf (a magician) it is clearly metaphorical. However, when P53 described the two middle managers under her as people insisting on personal, contractual rights disregarding the whole, this could be seen as a literal, non-metaphorical description. However, I chose to take such characterising description to be metaphorical, in that the thing characterised would be represented in terms of this characteristic. P53 saw the managers in terms of particular types of people. This category of people (whatever it may contain for her) became the source domain in terms of which she structured the target domain – the actual managers.

2. Which metaphor to categorise: Participants would often use several metaphors (one for their own role or point of view, one for the problem, one for others' behaviour or point of view, etc.). Sometimes one metaphor changed and others remained, or one changed to a different complex metaphor based on different primary metaphors, and another changed to a different complex metaphor based on same primary metaphors. In these cases, the problem was how to choose which metaphor to use for the categorisation. I chose to focus on the metaphor that other metaphors seemed to build on or relate to. For example, P17/G3's problem was that the strategically most important project did not get prioritised. At the beginning of the research, the next task in this project was a text that needed to be written. During the research, P17 changed

the metaphor she used for this text, from seeing it as a law text, to seeing it as a communicative text. This made it possible for her to write the text herself.

> "There is something in our understanding [of the project], right? … that we have gone way too far without getting sorted out. And it is just now that I step in and say: This, God dammit, not about law, it is about communication. I can write this" (17, 26, 00.16)

It is likely, that for P17 seeing the text in terms of law or in terms of communication are two different complex metaphors based in different primary metaphors. However, she saw the problematic situation itself as a complex political game, in which taking action always meant risking to step on somebody's toes. The primary metaphor underneath is that the situation is muddy and unclear social games that make her hold back from moving/taking initiative – until she cannot hold back anymore.

> "I'm part of this muddiness myself, this unclearness, by not, for example, making the problem clear. Also this thing about just doing it myself – like, a bit martyr-ish… instead of saying: Let us find out why the hell this is happening and where we need to go… there I could be much more clear. But I also become a bit 'nice'. And so we end up with three 'nice girls'" (17, 26, 04.38)

During the MI process she created another complex metaphor based on the same primary metaphors. I categorised P17 as 'different complex metaphor based on the same primary metaphors' referring to the metaphor she used for the situation – rather than the metaphor she used for the task – because the task was only a part of the total problematic situation.

3. When primary metaphors are not explicitly visible in the data: Even if the complex metaphors were visible in the language, the primary metaphors on which they were based were not always visible. In the cases where the primary metaphors were not explicit in the data, I used three guidelines to make the distinctions about whether a complex metaphor was based in the same or different primary metaphors.

First, if a participant kept using the same secondary metaphor, I assumed that this metaphor would keep being based in the same primary metaphors. For example, throughout the entire research process, P47/G4 kept speaking about finding the right buttons to press to motivate employees and about pushing employees, in order to reach the goals the organisation had defined.

> "I know they can do it. I just think it is me who has to try to push the right buttons…. Praise and motivate and things like that – so they can move" (P47, 41, 15.52)

> "They are simply tired of it and then I have to try and press them through and motivate" (P47, 41, 10.58)

These were her main metaphors she used to speak about the situation, in spite of any metaphorical work she did during the MI intervention. There was no detectable change in the post-interview. I therefore categorised her as 'same complex metaphor'.

Second, if a participant used radically different complex metaphors, I assumed that they would be based in different primary metaphors – even if these primary metaphors were not visible in either their words or their artwork. For example, P15/G3 described how her perception of her own anger changes, from a sign of disliking and being disloyal towards employees, to a sign of being engaged – and even loving.

> "[speaking about getting angry at her employees] I have become clear that it is not necessarily something bad. I'm not disloyal, because I speak and think like that… It is actually ok to be angry and annoyed, and good that one can become this. Because then there is something. Yes. It's a sign that one is engaged, right?" (P15, 41, 00.59)

I cannot imagine disliking and disloyal as based in the same primary metaphors as engaged and loving. Therefore, I categorised this change as 'different complex metaphors based in different primary metaphors' – even if the primary metaphors never became visible in the data.

By contrast, P27/G3 also used different complex metaphors for the problematic situation, but it was difficult to say whether they were based on different primary metaphors. P27's problem was that her nurses felt they didn't have sufficient time to do their work, yet she could not engage them in reflection on how to optimise their workflow. This was frustrating for P27, especially because she could see many small changes they could make, that would make their work easier. In the pre-interview P27 described this problem in terms of professional dialogue being taken as personal critique:

> "They choose to take what I say – and if that is bad communication, I don't know – but what I say, they become hurt. And I keep thinking: Why the hell do they take it personally, instead of taking it professionally?" (P27, 26, 01.32)

In the post-interview, she described the problem in terms of a resistance towards being addressed as a profession rather than as a person:

> "The entire Gordian knot was: Why the hell won't you reflect with me, nurse? And maybe the answer is, that he won't do that because he wants that you talk to him as the whole person he is" (P27, 45, 02.51)

It is not possible for me to determine what primary metaphors these two complex metaphors are based in. I could imagine that both are based in a sensory experience of resistance, but that would be speculation. Therefore, I categorised the change as 'not clear'.

Third, if two metaphors were sufficiently similar in imagery and structure, I would also assume, they were based on the same primary metaphors. For example, returning to the example of P17, she first described the situation as a muddy political game where everyone is too nice and holding back to get things done. She disliked this and found it frustrating.

> "Unclear roles between managers. Lack of priority… many 'velvet gloves'. And, on the other side, maybe some lack of direct confrontation. Lack of responsibility from everyone. Who's in charge?" (17, 22, 00.00)

During the workshop she created another metaphor in which she described the situation as being forced to engage in games of seduction at a disco instead of just going home with a guy. She disliked this and found it frustrating.

> "The metaphor has made it clear. All this process… the whole game in this disco thing. It makes it clear to me, the muddiness there is." (P17, 46, 02.35)

> "This thing about the Disco (pause) Like, it's so clear that it is more about relations and jealousy and power and stuff." (P17, 47, 02.16)

The way she presented the political metaphor in the pre-interview and the disco metaphor during the intervention and in the post-interview were so similar, that I assumed they build on the same primary metaphors, such as, muddiness and unclear social games that make her hold back from moving/taking initiative. As previously mentioned, I categorised this change as 'different complex metaphors based in the same primary metaphors'.

Guided by the above rules I categorised each participant according to what happened with the metaphors they used to perceive the problematic situation through. In the two figures below, each row represents a participant. Figure 22 shows participants in G3, and Figure 23 shows the

participants in G4. For each group, I have placed the participants who experienced importing behaviour above a double line. The figures show that the import of behaviour seems to be related to the creation of new complex metaphors *based on different primary metaphors*.

G3	Learning outcomes				Metaphors used before and after MI				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
13	1	1	1		1	1			
15	1	1		1	1	1			
27		1					1		
49		1				1			
6	1								1
17	1							1	
25							1		
30	1							1	
48	1						1		
54								1	

Figure 22: Outcomes and changes in metaphors for G3

G4	Learning outcomes				Metaphors used before and after MI				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
4	1	1	1			1			
14	1	1				1			
20	1	1	1	1	1	1			
46	1	1		1	1	1			
55	1	1				1			
7	1							1	
23	1							1	
33	1							1	
47	1								1
53	1							1	

Figure 23: Outcomes and changes in metaphors for G4

By comparison, Figure 24 and Figure 25 show learning outcomes and changes in metaphors used by participants in G5 and G6, respectively. In Figure 24, the three participants who did experience import behaviour or removal of judgments are placed above the double line. These figures further support the relationship between changes in metaphors and learning outcomes suggested above.

G5	Effects of change in structure				Metaphors used before and after pause				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
18	1		1						1
26	1	1				1			
41	1	1				1			
1									1
3	1								1
32	1							1	
35	1					1			
40	1								1
51	1							1	
56									1

Figure 24: Outcomes and changes in metaphors for G5

G6	Effects of change in structure				Metaphors used before and after pause				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
2	1								1
5	1								1
9	1								1
10	1							1	
16	1								1
22	1								1
36									1
42	1								1
52	1							1	
57	1								1

Figure 25: Outcomes and changes in metaphor for G6

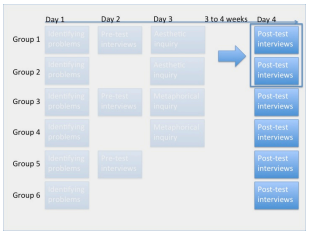
5.4.6. Future research on MI

In the MI-intervention, I asked participants to create new complex metaphors. I did not give any attention to whether or not these new complex metaphors were based on different or same primary metaphors as the participant used when they first formulated their problem.

Future research could explore a version of MI specifically designed to, not just generate new complex metaphors, but to generate new complex metaphors based on different primary metaphors. Such a version of MI might increase the likelihood of participants importing new behaviour.

5.5. Effect of AI

The effects of AI can be found by comparing the 20 post-interviews of G1 and G2 where AI was used, with the 40 post-interviews of G3, G4, G5, and G6 where AI was not used.



5.5.1. Removing negative judgments

In the AI group, participants removed negative judgments about self or others more frequently than in the other groups. Comparing the participants in the AI groups where this did and did not occur, showed that it happened more often when participants shifted their focus from the complex metaphors to the primary metaphors. It was as if, negative judgments belonged to the level of complex metaphors, and shifting the attention away from the complex metaphors allowed participants to explore sensory experiences without evaluating/judging them. The moment they evaluated sensations, they seemed to stop judging.

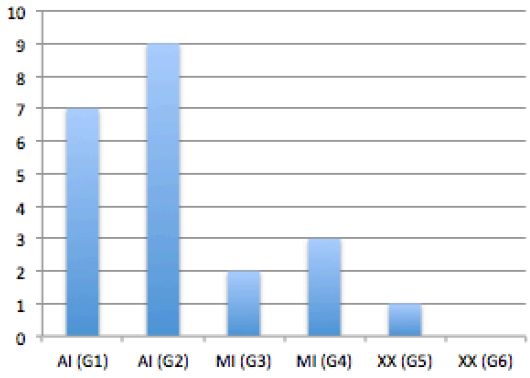


Figure 26: Removing judgments across groups

This learning outcome was visible when managers directly expressed that they no longer believed in a negative judgment about self or others, which they had expressed prior to the intervention. They sometimes expressed this by showing that they had become more open towards someone else's viewpoint, which they previously, had seen as wrong or unintelligent. They could also express it by showing that they saw some usefulness in others behaviour, which they previously had seen as useless.

5.5.2. Example of remove negative judgments of other's behaviour

In this section, I recount in detail an example of a participant who removed a negative judgment about her employees' behaviour. P44's problem was:

> *How can I make employees take responsibility for what they have responsibility for? How can I kick-start their own engine – after having worked for a very authoritative leader?*

P44/G2 perceived a lack of community and a lack of drive and of will to solve things together among employees in one department she had recently become manager for. The employees

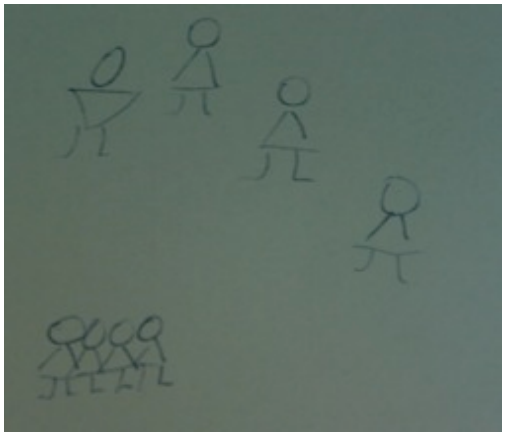
seemed to push all decisions on to her desk. She thought the lack of drive was due to having worked under an authoritarian boss before her, who did not allow employees to take initiative themselves.

In the workshop, she wrote the following poem:

> *"With plan and chat, it creates for me a crash.*
> *Not to take responsibility makes me sad, maybe I'm perceived as bad.*
> *Something has to be moved, even if it will be tough, 'cause when we lift it has to be done broadly.*
> *We shall leave our anger, 'cause then we are more prepared*
> *to pull together, and we are many enough.*
> *We shall bring our smiles, 'cause then we'll reach many miles"*

Both her picture and her drawing were about the sensation of uncoordinated individuals (spread out in space) vs. groups working together (individuals placed close together in space).

"When I came out I saw these lovely people standing in a heap. And this is how I experience the employees… they use immense amount of time on chitchat. And I'd like them… to go in and take responsibility and act on things. Picture number two should have been going and taking responsibility and extinguishing the fire in the barrel. But I didn't take it… that's what I'd like them to do… take responsibility and extinguish that fire" (33 01.11)



"It's from being a bit spread out and them coming in and finding the common culture and being able to lift as a group" (33 00.46)

Reflecting on her poetry, pictures, and drawing, she stated:

> *"When I took the picture, it clearly did something to me, because it is clear that this group has a sense of community… What it did to me is, that my employee group has this also. Regardless… I don't think I have given myself the insight to experience (what they have) as a form of community…I have to start from the community that is there… There must be some energy in this that I need to find and use in some way… It is also about finding a common*

goal for them… And it should not be my goals, but something they are also involved in defining" (33 03:45).

Thus, in the picture and drawing, 'community' is represented in terms of spatial composition, which goes beyond representing it as whether or not the group would pull together and lift the tasks defined by her. As visible in the quotes above, this brought into question her negative judgment on the employees as individuals who lacked a sense of community and the ability to 'lift as a group'.

In the post-interview, P44 had changed the way she perceived and engaged with the situation in a number of ways. She saw that:

"I should generally stop extinguishing fires in the situations and more make them start these processes themselves… instead of them all the time coming and asking me. I need to be better at playing the ball back to them… to 'how do you feel? How to you experience the situation?" (P44, 41, 12.07).

She told a story about a parent meeting that went really well, where she asked the employees to prepare presentations themselves. She saw this as a new behaviour for her, and as proof that the employees could actually take responsibility if given the chance (41 0.00). Thus, she had become keenly aware of the role she played in continuously creating the problem.

"It has opened my eyes to the part of it that is my way of acting in my management – and especially in relation to this employee group" (P44, 46, 02.04).

Furthermore, she had become aware that her nervousness about playing the ball back to the employees had to do, not just with a lack of faith in the employees' competencies, but with

"…nervousness in relation to unclear expectations… also to me" (P44, 46, 04.27).

Being the new boss in the department, she was not clear about what the employees expected from her and this gave her performance anxiety. She was afraid that the employees might perceive her as incompetent if she played the ball back to them, instead of solving their problems for them (P44, 46, 05.54). Realising this made her relax about her own performance. Thus, a second judgment of the employees as judgmental towards her was removed, clearing the way for a more relaxed attitude that made it easier to play the ball back to employees and, thus, bring their competencies in to play (P44, 46, 06.08).

Thus, P44 shifted her focus from a complex metaphor where community was seen in terms of ability to carry out the tasks she gave her middle managers, to a primary metaphor where community was seen in terms of physical proximity. This shift was accompanied by a removal of two judgments, namely that employees are incompetent and do not take responsibility, and that employees may judge her as a bad leader if she don't help them solve their problems. Removing these judgments allowed P44 to engage with the problem in new ways. It allowed her to give the middle managers freedom to take responsibility, and it allowed her to let them solve their own problems, instead of solving them for them.

5.5.3. Example of removing negative judgments of own emotions

In this section, I recount in detail an example of a participant who removed a judgment about her own anger. P31/G2's problem was:

> *How to change the attitude of employees away from the divas' focus on their own start status or the wage slaves' focus on their contractual rights. How to heighten their organisational awareness?*

P31 was owner of a dance school. Her main problem related to two groups of employees, who she called 'divas' and 'wage slaves'. She thought these groups of employees had problematic attitudes. Divas were the employees who were primarily concerned with being promoted as the stars, e.g. being the main name on event poster, giving most shows, etc. Wage slaves were those who were primarily focused on their contractual rights and on counting minutes and knowing how much money they would get for each minute of work. In both cases, she found that the employees did not cooperate well in doing what was needed to make the organisation thrive.

This perceived lack of cooperation made her angry, but she judged her own aggression as the opposite of being open, inclusive, listening, rationale, reasonable, and likable. In the workshop, however, she wrote a poem that expressed the sensory experience of her anger:

> *"Thoughts like confetti, arms like soft spaghetti*
> *Complaint-arguments flickers, unmanageable dangers, indisputable.*
> *Strife that makes me explosive. The jaw is tight and aggressive.*
> *Should I let them make noise? Ego up pillars, down frames (variation of Danish idiom).*
> *Shoots the screen in between them and me. The face turns to stone.*
> *The mass stiffens. Unimpressionable. The world wooly, unreal"* (P31, 34, 00.00)

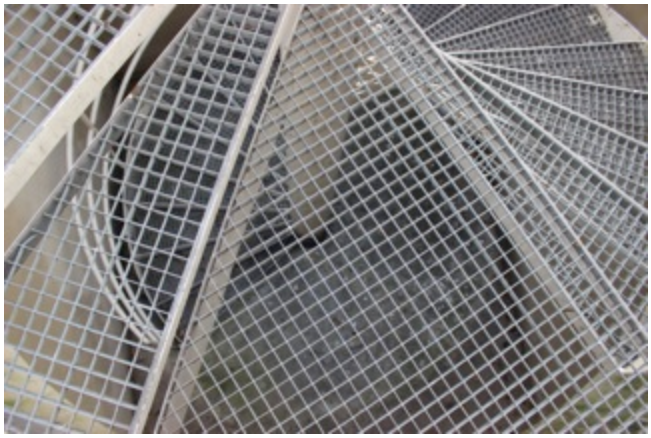
She took a number of pictures that expressed her sensory experience of confusion, i.e. the flickering, unmanageable. The elements in the pictures got entangled and it is difficult to see clearly what is what (see pictures below). She also explored the explosiveness and the screening off through pictures.

She drew a picture with a jagged shape with clear edges, which she saw as her aggression, and a more diffuse form on top, which she saw as her confusion. To one side she added a screen and a ladybug, which represented her current 'solution':

> *"Put up a screen and stay completely expressionless on the other side of the screen… ladybugs are not known for many facial expressions" (P31, 34, 6.26).*

"Some windows reflecting something. Are you looking in or at the reflections or the window it-self?" (P31, 34, 00.58)

"Thing overlap. There are many ways to go and many decisions… but I cannot see where I get to if I choose one or the other way" (P31, 34, 00.58)



"It's a staircase that is both transparent and a bit flickering, 'cause one can see other steps through the steps. And one has to look for a while to see if the steps go up or down. So it's a bit confusing and unmanageable" (P31, 34, 00.31)

"Is it the bin or the bag that is important? And if the bag wants to be something, is it ever something in and of itself? It becomes unclear what is what" (P31, 34, 02.30)

"I tried to find something explosive. Two dog fart bags escaping from a trash can was by far the most explosive I could find" (P31, 34, 02.30)

"There is some aggression in the middle and some confusion over here and my usual solution over here…. To put up a screen… and stay expressionless on the other side of the screen" (P31, 34, 05.53)

Thus, P31 explored the sensory experience of the problem through words relating to sensation and through visual shapes in the photographs and the drawing. In this exploration, confusion, aggression, and screening off became three clearly distinguishable elements. In particular, perceiving confusion and aggression as two separate elements in her experience, changed the way she perceived the situation and, consequently, how she engaged with it. When reflecting upon her poem, pictures, and drawing, she became curious about

> *"…how much I use flickering and confusion to cover aggression" (P31, 34, 7.29-8.53).*

This perspective was new for her:

> *"I have not thought about it in this way before. I have more thought that I should be rational, thoughtful, understanding, containing, flexible, and mmm. So therefore I have not expressed the aggressive side. And I don't think I have been aware of how much I use the other thing to simply distract myself from it" (P31, 34, 8.53).*

She also saw a new possible action, namely, expressing things clearly and in the moment, rather than by reflecting on it and

> *"…hiding myself behind a little piece of theory" (P31, 34, 11.15-11-57).*

The day after the workshop, she lead a teachers' meeting, which is one of the places where divas and wage slaves often take up so much time, that the organisational issues she wants to address are left unresolved. However, she experienced this meeting differently:

> *"I was much clearer about what I wanted from the meeting and which agenda points they were supposed to have an opinion about and which they absolutely did not need to have an opinion about. And what I got back was very constructive" (P31, 41, 2.31).*
>
> *"I have not done this so clearly before" (P31, 41, 06.29).*

She believed the reason for this new behaviour was

> *"…the talk we had the day before about clarity. Or that I let too much stay unclear and therefore there is too much room for inventing one's own tampering… by making it clear what we needed to do, what I expected and what frame there was both for the meeting and the single agenda points, I got rid of some of the confusion – both for them and for myself. And therefore, I could also cut off and say: Now you have no more time for talking… now we move to next point… I could say this without having to hold back out of misunderstood*

niceness until I got so annoyed that it would come out as a smack: Now we need to move on!" (P31, 41, 06.29)

She further discovered that the migraine she had been suffering from comes from tension in the jaw because she smiles all the time (41 14.28). She had equated 'likable' with 'harmless', but now she did not want to be so harmless that everyone will like her:

"…it costs too much and it is boring" (41 25.33).

She stated that her communication was no longer intended to make people like her, but rather to bring them somewhere (41 34.45). She summed up the behavioural changes after the intervention as: 1) framing meetings more clearly, 2) thinking something else about herself, regarding whether people need to like her, 3) only smiling when she wanted to and had a reason to (43 0.00).

To sum up P31's learning journey, she moved her focus from complex metaphors representing the blend of confusion, aggression, and screening off, to primary metaphors where each of these elements were seen through particular types of visual shapes and other sensations. Furthermore, whereas she had judgments about anger and confusion, she did not have any judgments about these sensory experiences used in the primary metaphors. She then realised that she used confusion to cover aggression and began to see aggression as something positive, which enabled her to clearly frame work and communication, and thus, make employees feel safe.

Six other participants, from G1 (39, 58), G2 (31, 43), G3 (15), and G4 (46) went through a similar process where negative judgments of own aggression were removed, enabling them to become clearer in their leadership. Eleven participants, in total, removed negative judgments about themselves (see Appendix 12.3).

5.5.4. Participants in G1 and G2, who did not remove judgments or only did so partially

Only four participants in the AI groups (P21, P24 & P60 in G1 and P38 in G2) did not experience removal of negative judgments of either others' behaviour or own emotions. All four had strong judgments over others' behaviour, which were untouched by the process. All saw learning as problem-solving, and, most importantly, none of them shifted their focus of attention from complex metaphors to primary metaphors.

P21 was the IT manager, and his problem was how to make his boss invest in IT. Throughout the entire process he kept seeing his boss as unable to comprehend the situation (negative judgment

on another) and, therefore, he kept looking for ways of *explaining* to his boss the necessity to invest in IT – including, considering how he could use the tools of the AI process to do this. Interestingly enough, this picture did not change, even though his boss was replaced during the research process. In the post-interview, P21 said:

> "There is a new CEO I report to. He's American. The other was from Singapore. It's actually the same but in a different way. There are no authorisations" (P21, 41, 0.05).

He still judged the CEO for being unable to make decisions.

> "He shoots from the hip. There is no evidence for what he says. He does not know what he talks about…I try to read his body language… can I catch him in a place, where I can make him realise something?" (P21, 41, 4.39)

In the pre-interview, P21 saw the problem in terms of difficulties with explaining the issue to the top management:

> "Business case is created. The numbers are correct… documentation is attached. Everyone is informed about the issue. They do not show up for the meeting. Reminders. Communication eventually works. The issue is explained… There is no understanding of the need. They do not assess the need as being evident. I present the risk by not doing things and it is rejected or postponed. The process repeats" (P21, 22, 00.00)

In the post-interview, P21 still saw the problem as one of explaining to top management:

> "The IT support is not acknowledges by the top management. And therefore I have a challenge explaining what our IT and business platform can do to create value in the organisation" (P21, 42, 00.00)

Thus, P21 kept the same metaphor for the situation (it's a problem of explanation) *and* he kept his judgments of his boss, even if the actual person changed.

P24's problem was how to avoid being taken advantage of by an employee. He experienced that he would give this employee a raise in exchange for increased responsibility or workload and that the employee would be unable to handle these new tasks, but would be unwilling to give up the raise. He kept seeing this as a character flaw (negative judgment on another). He kept using the same metaphor for this behaviour in both pre- and post-interview. He saw the employee as a cogwheel with a little stick preventing the wheel from going backward.

He did create a new metaphor where he saw managing organisational change in terms of pollarding a tree. Through this metaphor he found a trust in that he could fire the employee and that the organisation would "grow out again". Thus, he changed his action strategy from trying to reason with the employee to simply firing her. However, he never changed the complex metaphor through which he understood the employee's behaviour *and* he never let go of the negative judgment he held around this employee's behaviour.

P38's problem was that he had two trainees whom he saw as "luxury students who have never learned to work" (P38, 46, 0.04). He also kept looking for ways to make these trainees understand what he wanted them to do. At the end he acknowledged that there must be something he doesn't understand about their motivation. However, he still he did not get closer to providing an explanation for their behaviour, and he kept his negative judgment about them.

P60 simply saw the AI as something that 'wasn't her'. Furthermore, she stated that the problem, she initially had selected, was never really a problem for her. She stated that she knew how to deal with the situation, that certain parts of the political agenda were irrelevant, and that certain attitudes in employees should just be changed. In her pre- and post-interviews, she expressed the exact same metaphors and judgments.

Thus, in all four cases, participants did not experience removal of judgments, they did not change focus to primary metaphors, and the complex metaphors they used for the problematic situation remained the same.

5.5.5. Distinguishing removal of judgments from other phenomena

A few critical words are in place regarding how I decided whether participants could be said to have experienced removal of judgments or not.

Some participants were easy to categorise. These participants expressed surprise about the new way of perceiving, they had a genuine excitement about this change, and they could tell stories supporting that a change had occurred. For example, P31 was able in the post-interview to tell a story about how removing the negative judgment on her own anger had changed this into an assertiveness that she had put into practice. P37, 39, 45, 58, and 59 could all also provide stories about how removing the negative judgment had led to concrete changes in their own behaviour. P39 had written an email to an employee expressing why she felt it was important that he showed up to meetings. She had previously feared this as leading to conflict. Instead the person

simply agreed and was happy that somebody had noticed he wasn't there. P45 realised that the employees she didn't like actually embodied values she respected and admired far more than the values her own work embodied. She had stopped assigning blame and begun to gather the relevant people together in dialogue about the facts of the projects. P58 had expressed her frustration to her colleagues and boss at a social gathering and had been happy to see that they had welcomed this. She had got the response that it was nice to see her a bit more human (she had feared that the expression of frustration would have been seen as inappropriate). These were all easy to categorise as someone who had removed negative judgments about own emotions or others' behaviour.

Equally easy to categorise were the four participants I discussed in detail in the previous section (P21, P24 & P60 in G1 and P38 in G2) who all clearly stated the same negative judgments in both pre- and post-interview.

In between there were several participants where it was more difficult to determine whether or not they experienced removal of judgments. In the following, I give a few examples, which illustrate some typical difficulties and how I dealt with these.

Several judgments: Sometimes one judgment would be removed, but another would not be removed. I categorised these cases as *removal of* judgments, if the removal of the one judgment had significant impact on the participant's perception of the problem. For example, P8/G2 initially saw herself as simply bad at remembering the long-term planning tasks when she has short-term tasks (a negative judgment about herself).

> "Here and now tasks – my own consultancy tasks – take my attention away from being leader of the organisation and take care of the administrative things and create a plan for the year and revise the budget for the year and all this, which also needs to be taken care of and which is important" (P8 33, 04.33)

During the AI process P8 focused on the sensory experience and discovered that she saw long- and short-term tasks in terms of black and white contrasts, i.e. mutually exclusive. This metaphor is complex in the way that it does not simply focus on the sensory experience but also includes a layer that judges the sensory by stating that black and white are mutually exclusive qualities – the more you have of one, the less you have of the other. While exploring the sensory experience through photography, she took a picture of a sculpture consisting of two parts. She saw that the two parts could be seen as just that – two parts – rather than as an opposition. Seeing the

problem in terms of this primary metaphor, i.e. seeing long-term and short-term tasks as two parts of one figure, instead of seeing them as contrasts in opposition, dissolved her focus on which of the contrasting parts she was best at and which she neglected. With this layer of thought gone, she realised that she was not *bad* at making long-term decisions, she was *afraid* of it. P8 describes the process well in the quote below.

> "I think that this thing about not speaking so much in oppositions but rather in connections is a key point for me. Also in this thing about not talking one-self into a black and white construction – where one says that I'm best at short-term and I'm worst at long-term, right? That does not help, one can say. But really, I start thinking, what is it really about this long-term? Is it that one needs to make decisions on a foundation, which can be more or less ambiguous and that it is always a bit anxiety-provoking to make long-term decisions about something you are not sure of, right? The aversion might really be about fear of making decisions, where you risk making bad decisions!!? Like, you can push it and then you can wait, and then you might get more informed… maybe that is really the problem! Can you follow me? It is the fear of not making the good decision that makes it difficult to take care of the long-term things" (P8, 41, 00.00)

Thus, when P8 moved her focus to primary metaphors and left the complex metaphors behind, the judgment about her lack of ability to engage in long-term planning tasks was removed. This allowed her to see an underlying fear. When I asked how she knew that a long-term decision was bad, she said it was bad if someone else was unhappy with it. This points to a different set of judgments, and these were not removed.

Thus, one judgment was removed but another was not. In spite of this partial removal of judgments, I chose to include P8 in the category of *removal of judgments about self* because removing the one judgment radically changed her perception of the problem.

Partial removal of judgments: Other participants increased their understanding and sympathy for others' behaviour – but still thought this behaviour was debatable. This can be seen as a partial removal of the judgment against others' behaviour. I categorised these cases as removal of judgments, if the participant removed their judgment on a behaviour to the degree where they could either engage in this behaviour themselves or honestly acknowledge the usefulness or legitimacy in others' behaviour.

For example, P28 thought that political actions were 'pop' – something not serious. However, she did modify this view in the post-interview. She acknowledged that such actions could have certain practical value in gathering attention and funding into a project, thus allowing it to be more impactful. However, in spite of acknowledging the usefulness of political actions, she kept finding them somewhat unserious.

> "One doesn't have to call it 'pop', one can also call it 'creating enthusiasm for the thing one wants… but if someone thinks it [a project] is more interesting when a CEO for Danish Industry wants to talk about it, then I think it is pop – to be honest" (P28, 45, 5.25).

Furthermore, P28 also had a judgment about people leaving projects she was in charge of. During the AI process, she changed from seeing this as a sign of failure to seeing it as natural selection. It never became clear what primary metaphors P28 focused on, or whether she explored primary metaphors without complex metaphors. However, she did change her complex metaphors radically and she did lose one judgment about people leaving her projects and softened another judgment about people interested in political actions. Therefore, I put her in the category of *removal of judgments of others*.

When participants do not discover the removal of a judgment: P29 did experience removal of judgment, but did not discover this until the post-interview. P29's problem was that she had an aversion towards administrative work and follow up tasks. She knew that following up with clients, answering mail, and administrative work was important, but she felt restricted by it and it was a struggle for her to do it. During the workshop she stayed with the sensory experience and instead of calling it restrictive (a negative judgment on the physical sensation) she simply felt it as solid. Staying with the sensory experience, led to a new perception of the solidity as something supportive rather than restrictive.

> "[The tasks in question] went from being negative – limits, a wall I think – to something I could hold on to instead… it gives support to the body, to be able to hold on. It gives support to all the ideas I get, so I don't get led astray… like being in a storm and I can hold on there, in spite of the storm… It makes me straight – and a bit stiff – but it is not unpleasant" (P29, 33, 8.36).

In the post-interview, P29 started by stating that the intervention had not had any lasting effects – that she had forgotten it.

> "Yes… well, I have become very aware that I need to also have homework. 'Cause I have not stuck with it. And I have actually not used it. I loved the tasks you gave us, and then I couldn't find them again and then I forgot about it. Where I thought, they were actually not affecting me. Now [same day as interview] I have looked at them again. If this should have an effect, I should look at it all the time" (P29, 41, 00.00)

I then asked her to tell me about the last time she did one of the follow-up tasks she had a problem doing and describe how she felt about doing this task. To her own surprise, she had had no problem with it.

> "I described a project, which I needed to hand in. It was easy. It was just doing it. (*Interviewer: How about the previous week, can you think of another concrete task?*) Yes there was something about some bills and coordinate with the accountant and such things. And I think, actually you are right, or you are not saying anything but I have actually wanted to do these things. It has been a bit difficult to find time for it, due to other things…. But I have actually wanted to do these things. I got to admit that. (*Interviewer: You sound surprised*) Yes, actually. Now when I look at my mail inbox, I've just thought that is something to do" (P29, 41, 08.30)

Thus, in the post-interview, P29 initially thought she still found follow-up tasks unpleasant, but when she recalled her recent experience of doing such tasks, she noticed, that this had not been the case – at least for the concrete times she recalled. This surprised her. On one hand she could not deny that she had recently found pleasure in follow-up tasks, on the other hand it did not make sense to her that the intervention could have had such an effect without 'homework'. She even suggested that I could call her again one month later to test whether the effect would stick. I did not do this. As the judgment was present when she described concrete tasks in the pre-interview and absent when she described concrete tasks in the post-interview, I categorised P29 under removal of judgments about own emotions.

The above illustrations show some of the typical difficulties in deciding whether participants could be said to have experienced removal of judgments or not. They also give an impression of how I dealt with these difficulties.

Figure 27 shows participants in G1, and Figure 28 shows the participants in G2. For each group, I have placed the participants who experienced removal of judgments above a double line. The

figures show that removal of judgments in most cases relates to an *increased focus to primary metaphors*.

G1	Effects of change in structure				Metaphors used before and after AI				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
11	1	1	1	1		1			
29				1	1				
37				1	1	1			
39	1			1	1	1			
45	1	1	1		1	1			
58	1			1	1	1			
59	1		1		1	1			
21	1								1
24	1								1
60									1

Figure 27: Outcomes and changes in metaphors for G1

G2	Effects of change in structure				Metaphors used before and after AI				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
8	1		1	1	1	1			
12	1	1			1	1			
19		1			1	1			
28	1		1				1		
31	1			1	1	1			
34	1		1		1	1			
43			1	1	1	1			
44			1		1	1			
50	1		1				1		
38	1							1	

Figure 28: Outcomes and changes in metaphor for G2

5.5.6. Types of change in metaphors during AI

In the MI groups, only 45% (9 out of 20) experienced importing behaviour from different contexts. In contrast, 80% (16 out of 20) of the participants in the AI groups experienced removal of judgments.

The main difference between the participants who experienced removal of judgments and those who did not, seemed to be whether or not they were able to move their awareness to the primary metaphor, and leave the complex metaphors (at least for a while). For example, P39 and P58 from G1 and P31 and P43 from G2 all explore their own anger in terms of *heat* – a primary metaphor – without their habitual complex metaphors, such as, anger produces conflict that blocks solutions (P39), anger is inappropriate for leaders (P58), anger is not likable (P31), and anger is pedantic (P43). All found that when exploring anger as heat and energy for a while, it then began connecting with being clear in communication and taking leadership. Thus, by focusing on exploring the primary metaphors and leaving the complex ones, new complex metaphors could emerge.

In contrast, P21 did become aware of the sensory aspects through which he represented the situation, but these sensory aspects were never explored on their own. They were continuously linked to a complex metaphor of hopelessness. When asked to describe the situation in terms of purely sensory words, he said: "challenging, rejecting, energy draining, long-winded". Challenging and rejecting are not directly linked to physical sensations. When asked to explain how the challenging and rejecting aspects felt to him in terms of the sensory experience, he said: "slow, cold, dry, and frozen". However, the word he used for frozen (Danish: indefrossen) is associated with passive aggressiveness, not just temperature. Similarly, the words energy draining and long-winded have clear negative connotations. Using sensory words with such negative connotations showed that he still related the words to a complex metaphor, rather than simply stating the physical sensations. P33 used the words "anger, over-pressure, rainy weather, nausea, stinging". These words were pronounced with a disgust showing their link to the overall complex metaphor and to a rejection of experiencing these physical sensations. P24 spoke about "distance and many hard and boring numbers… grasping" and contrasted this sensory state with "clarity and relief and jam session". When asked he described the jam session as covering the physical sensations of bubbling and flowing like a fountain. Again, the physical sensations were not described purely in their own right, but rather on the backdrop of a complex metaphor.

These examples suggest that complex metaphors are needed to pass negative judgments on sensory experience. Before the primary metaphors are strung together in complex metaphors they are neither good nor bad. The complex metaphor seems to function as the evaluative framework. Thus, it is not surprising that focusing awareness on primary metaphors (leaving the complex ones far in the background) seem to facilitate removal of negative judgments.

5.6. The experience of the concrete learning intervention as source of learning

The above observations suggest that at least parts of the learning that occurs in the interventions are not only shaped by the content addressed during the intervention, but also by simply *experiencing the intervention itself*. For instance, practicing to create metaphors during the MI intervention, participants may learn the more general skill of forming links between unrelated areas of life and, thus, noticing the applicability of behaviour from one context to an unrelated context. Similarly, by practicing describing sensory experience during the AI intervention, participants may learn the more general skill of perceiving situations more through sensations (i.e. primary metaphors), without judging these sensations as good or bad.

The above finding, that different types of working with metaphors made different types of learning outcomes more likely, and that these matched the learning intervention, supports this claim.

5.6.1. Learning from experiencing the process

The suggestion that the *experience of the intervention itself* can be an important source of learning is supported by a number of cases where participants state that important learning came out of concrete experiences they have had during the learning intervention. It is interesting to notice that these experiences were often not central parts of the design. Below I give some illustrative examples:

In the post-interview, P4/G4 stated that he had begun to solve conflicts through face-to-face dialogue, rather than mail:

> *"I feel that it has an effect on me personally, because it has opened me up for something functional, where one can work with difficult things… it is important to put oneself in the other person's place… instead of thinking that they do like this because this or that, then one can just go directly to the source and ask! And let people tell things from their reality and understanding, and it is a kind of coaching, and that one says that one experiences a problem with this. And I have actually done this, but in a very square way: 'we have a problem and it looks like this and we should do this and this and this'. And then that one instead can take the extra step and say: 'I experience that we have a problem. What do you think? How do you see it? That one has a dialogue" (0:15:23.6)*

These insights did not immediately connect with the metaphors and insight P4 had presented during the MI intervention. However, when asking how this change in perception/behaviour had come about, P4 said:

> *"I think that for me it was that we did so many different things [poetry, photography, and drawing]. It was an epiphany: that one can do this, one can do this, but one can also do this and this. And for me it is a kind of innovative process… to journey to a new place to people one does not know and look at everything from many different angles. It is very interesting" (41 19.30).*

He had come to think of himself and his colleagues as parallel to the different art-media he had experienced at the workshop, where each media (poetry, photography, and drawing) had shown him different aspects of the problem, which were all important. Hence, to get a full view of the problem, he needed to hear his colleagues' viewpoints – rather than forcing them to accept his.

P46 realised that she had a tendency to pretend that she is on top of everything. She tried to be a super-woman. This self-image was her comfort zone. Seeing this, she realised that staying in this comfort zone makes it difficult to ask her employees to step out of their comfort zone.

Again, this learning did not seem directly related to the products she created on the workshop or to the talks we had about these products. When asked, she stated that she had learned this from participating in a process where someone, namely the facilitator, had asked her to do a number of things that were unusual (and a bit uncomfortable) to her. She had in this process noticed her own resistance towards being told what to do. It was this experience that prompted the conversation leading to the above insights (41 11.55-19.15).

P19 used a brush pen to make his drawing. Initially, he tried to draw straight lines, but found it impossible to do with this type of pen. In the end he stopped trying to exercise control and experienced how relaxing this was. This experience became central in his further learning.

P31 (described in detail above) mentioned that the very short time she had to formulate her poem (20 minutes) was crucial in that it did not leave her time to edit her expression, which is why the aggression stood out so clearly.

P39 mentioned that simply expressing her own point of view had been central to her learning. As mentioned above, others mentioned this too (P11, P15, P31, P39, P43, P46, P58).

All these cases show that the experience of going through the intervention, rather than the content addressed in the intervention, was a source of learning. In other words, parts of the experience of the learning intervention were later used as a tool for structuring other experiences.

5.6.2. Learning applied to situations beyond the problem

Both import of new behaviour and removal of judgments occurred when the participant learned to use new experiences as source domain to induce a new structure in the problematic situation. Some cases show, that once participants had learned this, they could go on and use the same new structure in other situations beyond the original problematic situation. For instance, P59 learned that by focusing on the energy in a conflict, she could avoid being caught by negative stories of her employees. She originally looked at how to approach a conflict, where nurses were unsatisfied with what the economical situation of the hospital permitted them to do for the patients. However, in the post-interview, she reported that she had used the same approach in handling a conflict between two groups of secretaries. P58 started with the same problem as P59. P58 learned the value of expressing her own frustration as a way of becoming more present in the room. In the post-interview P58 told how she had used this learning to solve a difficult situation with a friend.

P8 all oppositions are one's own construction

5.7. Challenging the analytical process and the findings

To achieve transgressive validity, it is important to challenge both the findings and the process through which these findings were produced. In the following, I explore alternative interpretations of the data.

5.7.1. Effects that are tied to the starting point of the individual participant

While coding the interviews, I found a number of learning outcomes that I chose later to delete from the coding tree because they were so dependent on the participants starting point, that it was not possible with any confidence to see them as effects of either test-procedure, passage of time, MI, or AI. The most important of these were.

For example, some participants began to describe their understanding of the problematic situation and possible actions in more concrete ways. For example, P3 in the pre-interview stated that

> "What one needs to do is clarify what brings value to the organisation. And here one can look at management theory dating back to the industrialisation and onward, what adds growth. The more positive energy you can add to your organization the better problem solving you will have. The res one should not focus on" (P3, 26, 00.00)

In the post-interview he described in more concrete terms how he focused on adding positive energy to the organisation by dividing employees into three categories and supporting the ones who were positive and, ultimately, fire the ones who were not positive.

> "I have begun, in collaboration with union representatives and other employees to – not divide, but articulate – colleagues in three categories: the ones who want (to work), and want (to support) the system, and want to go the right way in relation to the way we have to go. Those we will do anything for… the ones who come to work from eight to four and get a check at the end of the month. They get treated correctly… Those who do not want the system and do not want to work, and do not live up to our – not demands, but missions… and if they do not want these things and work against them all the time, then we do not want them either" (P3, 42, 06.24).

Such a move towards more concrete descriptions is not strange, as I during the interviews consistently asked for more concrete descriptions. Whereas some participants seemed to find it easy to provide concrete descriptions from the first minute, others seemed to acquire this skill during the research process and some kept struggling. However, because participants were so different from the start, it is difficult to use the research design to reach any conclusions about whether the ability to provide more concrete descriptions was influenced differently by AI, MI, and interview process.

Another example was that some participants began including more faculties, such as, rational thought, emotions, and sensations in their description of the problems and possible solutions. For example, P40 spoke about the tension between the change agenda of the top management and the needs of individual students and teachers. In the pre-interview, he mainly described the tension by using concepts, such as, different values, different logics and perspectives, etc. In the post-interview, he included personal emotions in his description

> "I think our organisation is so big that our top management maybe need to keep the cards close... They don't get someone like me involved. I'm left behind because it is not discussed… It becomes a strategic game. That really annoys me" (P40, 23, 03.43)

He also included physical sensations in his way of describing the problem

> "Then I don't think I, as middle manager, can speak about things. Of course it's my closest manager I speak with. But I can hear that somewhere he also bumps into this Rockwool layer upward. Then the logic changes somehow" (P40, 43, 01.45)

Some participants would include emotions and physical sensations in their descriptions from the start, whereas others would stick to more conceptual descriptions throughout the process, and some would gradually begin to include emotions and sensations. However, because participants were very different at the outset of the research, it is difficult to draw any conclusions about whether the use of conceptual, emotional, and sensory language was influenced differently by AI, MI, and interview process.

A third example, participants seemed to find support for their perception of their problems in very different ways. When explaining the ground for their perception of the situation, some referred primarily to theory, others referred to what they had observed, and yet others referred to various ways in which they had tested and validated their perceptions. During the research process some participants moved from basing their perception on theory or observation to basing it on active testing, for example through dialogue with colleagues. However, because some participants relied on active testing and dialogue even before they came to the research, it is difficult to make conclusions about whether the use of active testing and dialogue to challenge and develop one's perception of the problem, was influenced differently by AI, MI, and interview process.

In conclusion, it is possible that AI, MI, and interviewing has different effects on the ability to describe situations in concrete terms, using both conceptual, emotional, and sensory language to enrich such descriptions, and the ability to challenge one's own perceptions through active experimentation and dialogue. However, participants were very different in these aspects at the beginning and it is therefore difficult to draw any conclusions. In fact, assigning participants randomly to the different groups were exactly aimed at treating such differences as confounding factors and distributing their impact equally on all groups. It is therefore not surprising that these codes show no clear pattern across groups. This could be an area for future research.

5.7.2. Exploring alternative causes for learning outcomes

In this section, I explore whether *removal of judgments* or *import of behaviour* could be effects of, or at least impacted by factors, such as, years of experience as a manager, years in the current position, number of employees, the time it took the participants to formulate their problem in the first meeting, which industry the participants work in, whether the participants work in the private, the public, or a hybrid sector, and participants gender.

In the above analysis, I have found a predominance of *removal of judgments* in G1 and G2 post-interviews and a predominance of *import of behaviour* in G3 and G4 post-interviews. I interpreted this as evidence that these effects are effects particular to the learning interventions (AI and MI) used in these groups.

However, it is possible that the participants, by chance, were grouped in such a way that the predominance of *removal of judgment* in G1 and G2 and the predominance of *import of behaviour* in G3 and G4 were caused by something other than having gone through a particular learning intervention as suggested in the above analysis.

As mentioned in the methodology section, I used randomisation to deal with possible confounding factors. However, as I showed in the descriptive analysis, certain factors were not evenly distributed across the six groups. For example, in G3, all participants were women, and G5 had more men than any other group. Thus, if women are more likely to import behaviour than men, then the high degree of participants experiencing import of behaviour in G3 might (at least in part) be due to the gender distribution and not necessarily due to the MI intervention used in this group.

To explore this in depth, I have created a number of population pyramid graphs. In these graphs, the y-axis represents the factor I wish to explore, for example years of experience as a manager. This axis is divided in intervals, for example, 3-8 years, 9-14 years, etc. For each interval a bar simultaneously shows 1) the total amount of participants within this interval (full length of bar), 2) the amount who did not experience removal of judgments (the part of the bar placed left of the axis), and the number of participants, who did experience removal of judgments (the part of the bar placed right of the axis). For categorical variables, such as industry or sector, each bar represents a separate category.

If these population pyramid graphs are very symetrical, the learning outcome is evenly distributed along the factor explored. This means that this factor is unlikely to have had any

impact on the learning outcome. By contrast, if there is a clear asymetrical pattern in a graph, the factor represented on the y-axis of this graph might have had an influence on the learning outcome explored in the graph. For example, in the graphs exploring possible impact of sector on *removal of judgment*, the bar representing private sector are much further to the left than the bar representing public sector. This might mean that participants from the private sector are less likely to let go of judgments about self or others than participants from the public sector (I explore this further below). Similarly, in the graph exploring possible impact of length of experience with management on *removal of judgment of self*, the bars representing long experience are slightly further to the left than the bars representing shorter total management experience. This might mean that participants with long experience in management are less likely to experience removal of judgment of self, than participants with shorter management experience (I explore this further below).

When exploring the various factors impact on the effects of *removal of judgments on self and others*, I have chosen to look only at participants in G1 and G2 where this effect was predominant. When exploring the various factors impact on the effects of *import of behaviour*, I have chosen to look only at participants in G3 and G4 where this effect was predominant. I have done this to look at participants who at least are comparable, in that they have gone through the same learning intervention. If I looked at the entire sample, I would mix participants who have gone through different learning interventions on top of having different demographic characteristics. Thus, looking at the entire sample in the population pyramid graphs would make it nearly impossible to draw any conclusions due to the amount of factors that could impact the shape of the graphs. However, this also means that each graph only looks at twenty participants, which is a rather small number. Therefore, the graphs cannot be taken as conclusive evidence of the impact of any factor on the frequency of specific learning outcome. Rather, the graphs can only indicate that there could be a 'risk' that a specific factor might have had an impact on a specific learning outcome, and that it should be considered whether or not this impact (if it exists) could have weakened the findings of the analysis above.

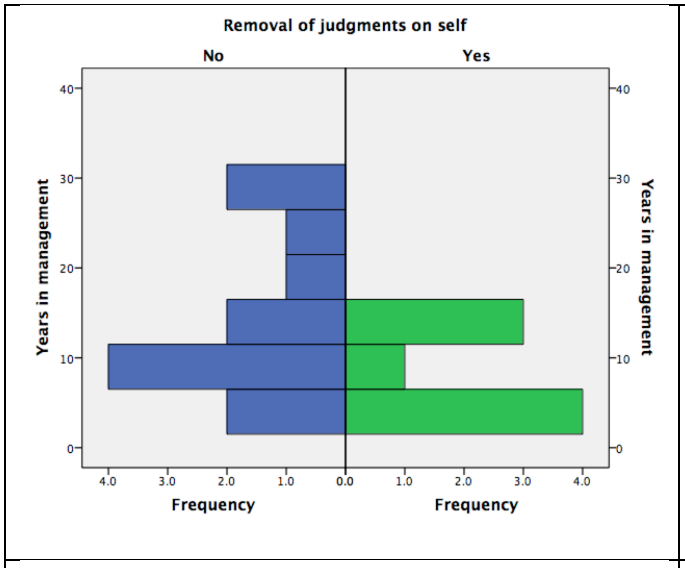
I will now look first at the factors, which are less likely to have had an impact: Years of experience as a manager, years in current position, number of employees, and the time it took the participants to formulate their problem in the first meeting. I then look at the factors that are more likely to have had an impact: industry, sector, and gender. However, I find that it is unlikely that any of these factors have had an impact that weakens the findings from the above analysis.

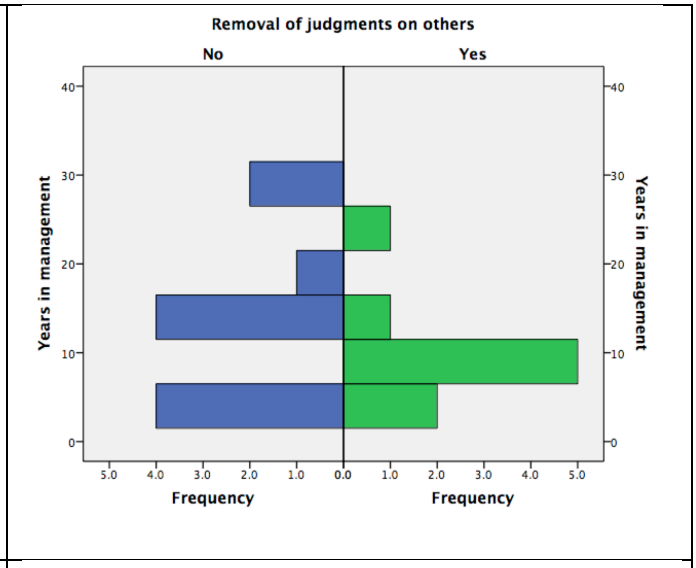
Years of experience as a manager, years in the current position, number of employees, and the time it took the participant to formulate the problem in the first meeting: The first eight graphs explore how removal of judgments on self and others were impacted by years of experience as a manager, years in the current position, number of employees, and the time it took the participant to formulate the problem in the first meeting. None of these graphs show very clear assymetrical patterns which would indicate possible influence. However, two graphs are worth mentioning.

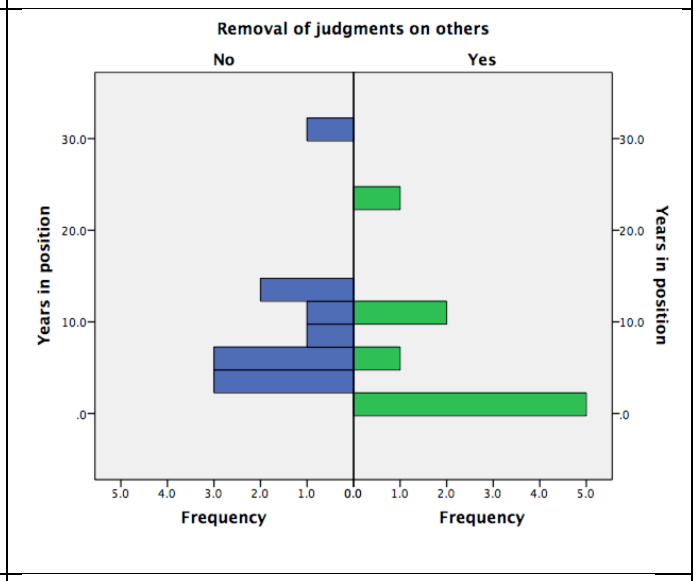
1. The four participants who have worked longest with management (over 15 years) did not experience removal of judgments of self (see the first graph below). This could indicate that participants with long management experience (for whatever reason) are less likely to experience this removal of judgments of self. If this is true, then the predominance of removal of judgments of self in G1 and G2 could be due to a high number of participants with shorter management careers in these two groups, compared to the participants in the other groups. However, participants in G1 and G2 had the highest and the third highest avrage years of experience as managers. If anything, this should lower the amount of participants experiencing removal of judgments in G1 and G2 – not make this effect predominant.
2. All the participants who were new in their current possition experienced removal of judgments of others. It seems natural that the phase in which one gets to know new coworkers, would contain an element of discovering that at least some of them are not as bad as one might have feared, i.e. removal of judgments of others. As in the above case, if G1 and G2 had had more participants who were new in their current position than the other groups, this might have explained the predominance of participants experiencing removal of judgments of others in these two groups. However, G1 and G2 are among the groups with the highest average years in current position.

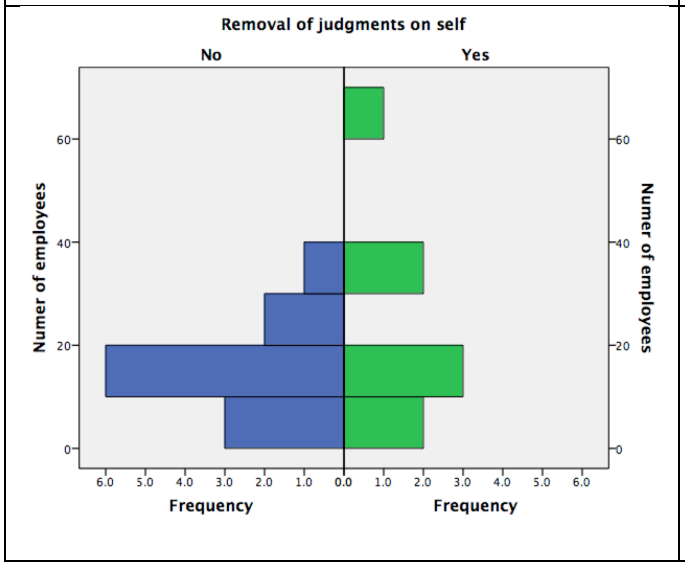
In conclusion, years of experience as a manager, years in the current position, number of employees, and the time it took the participant to formulate the problem in the first meeting cannot explain the predominance of participants experience removal of judgments of self or others in G1 and G2. Therefore, assuming that this is an effect of the AI learning intervention used in these two groups is still the best explanation.

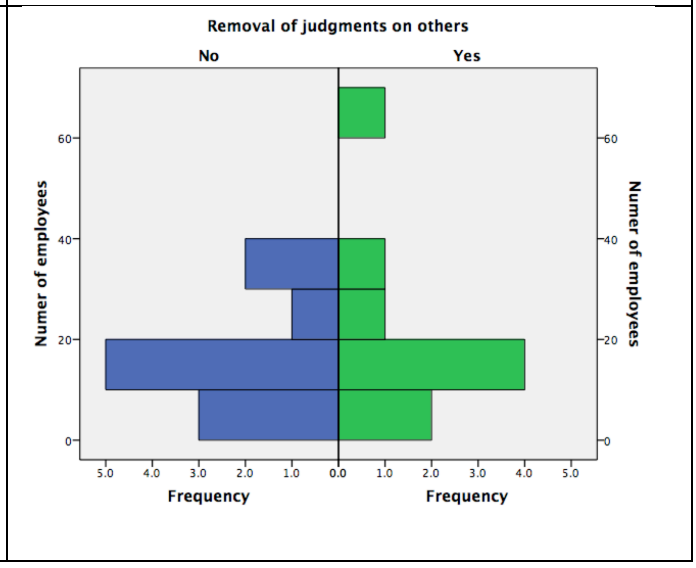
Table 4: Removal of judgments of self and other examined

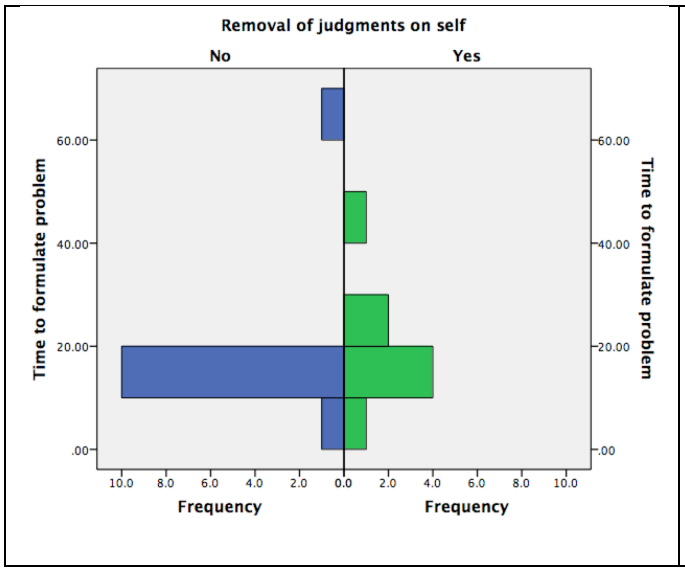


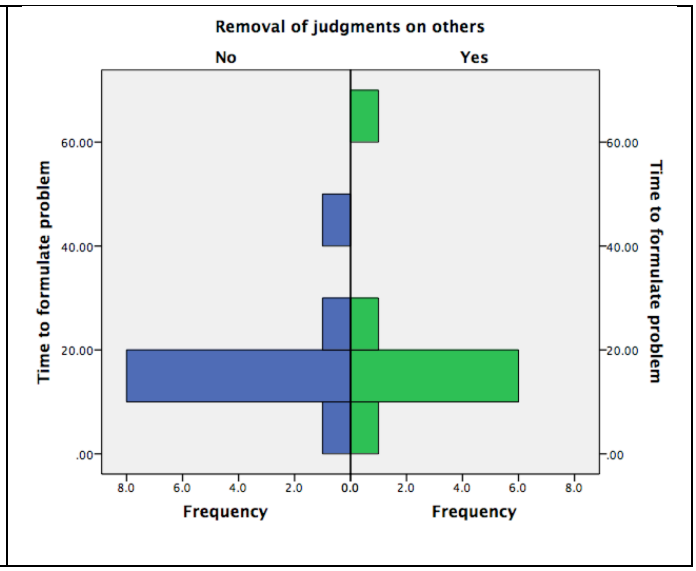






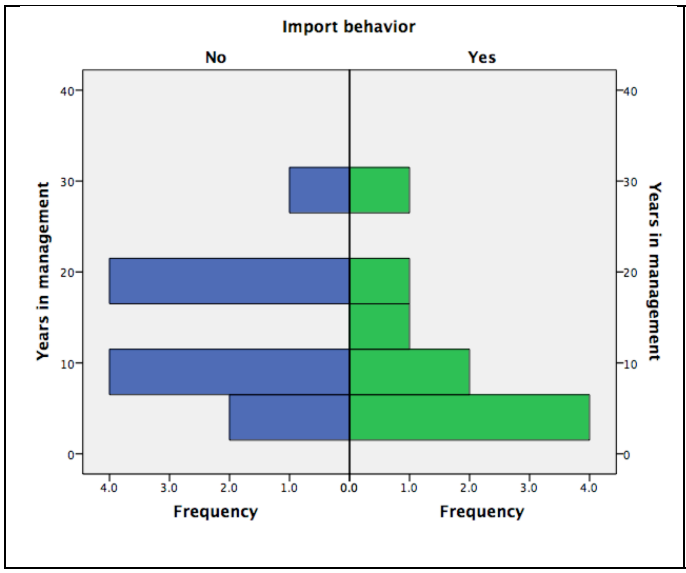


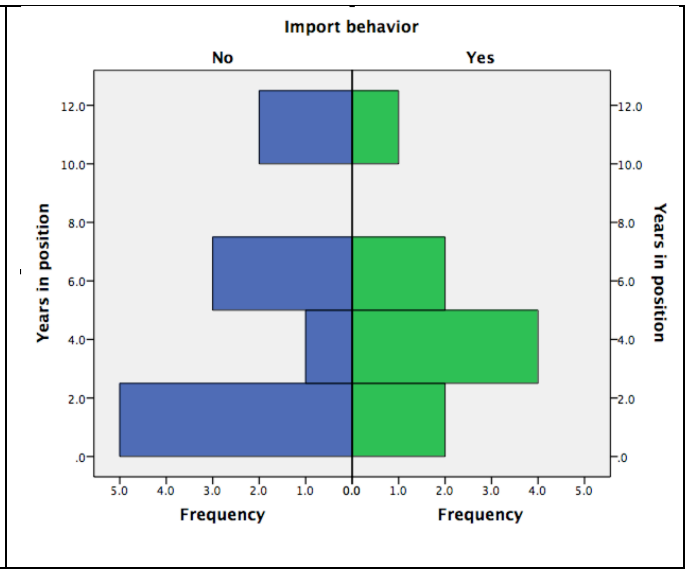


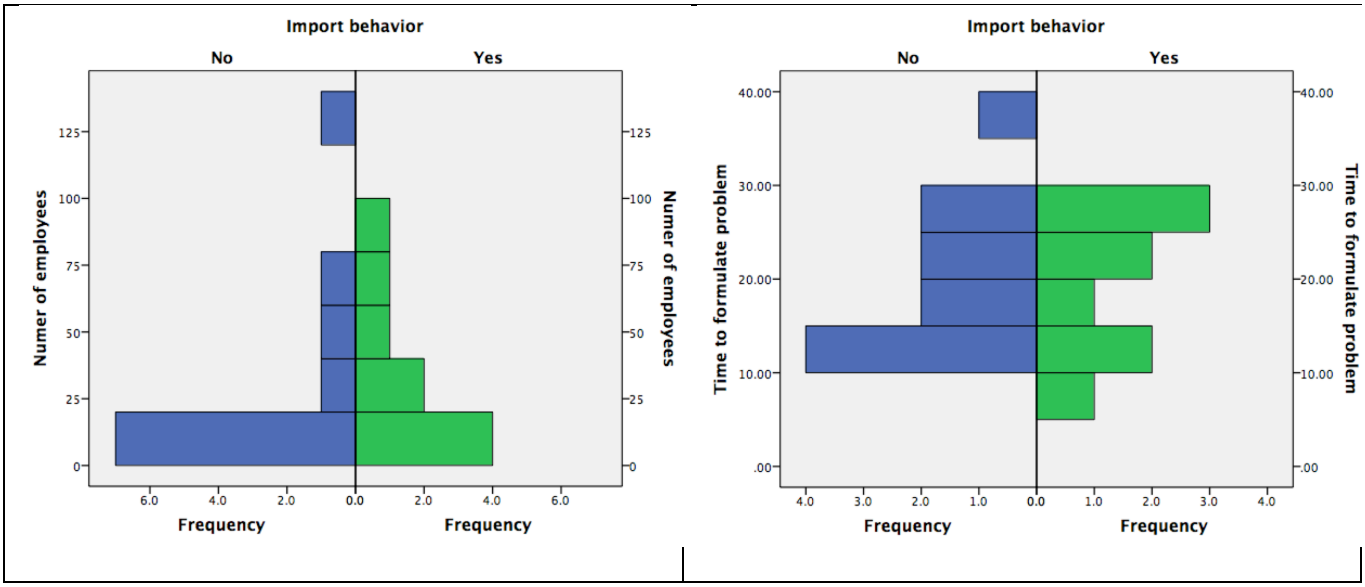


The four graphs below explore how *import of behaviour* was impacted by years of experience as a manager, years in the current position, number of employees, and the time it took the participant to formulate the problem in the first meeting. None of these graphs show clear asymetrical patters. Thus, it is unlikely that these factors should have had any impact on whether participants experienced import of behaviour or not.

Table 5: Import of behaviour explored







Industry: Looking at the graphs for industry, I choose to ignore industries with only one participant or industries where the difference between the number of participants who did and did not experience the particular learning outcome is *one*. Such asymmetries are simply too small to base any speculations on.

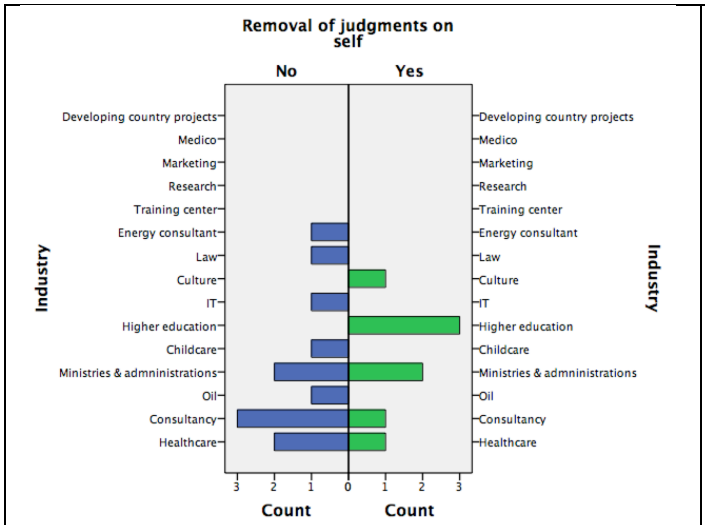
The two first graphs below might indicate that removal of judgments of self or of others, occur more frequently for participants from higher education or from ministries and administrations and do not occur for participants working as consultants.

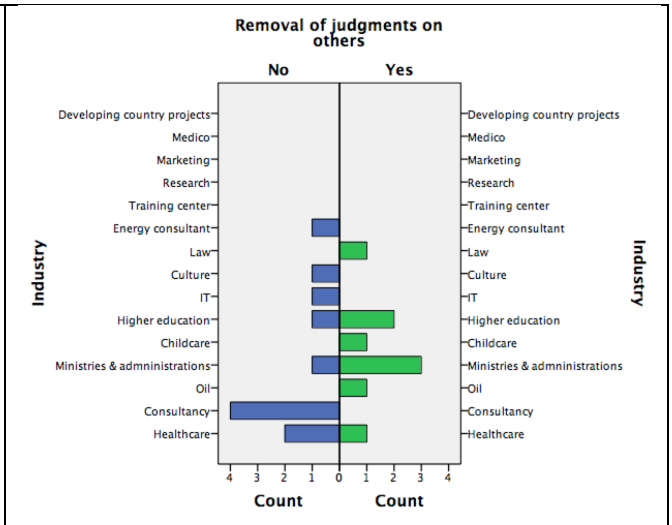
Thus, if G1 and G2 had fewer consultants than the rest of the groups, this might explain the predominance of the removal of judgments in these groups. However, G1 and G2 have four out of seven consultants. Similarly, if G1 and G2 had more participants from higher education or from ministries and administrations than the rest of the groups, this could also explain the predominance of removal of judgments. However, these participants are distributed evenly across groups with three in G1, in G5, and in G6 and four in G2, in G3, and in G4.

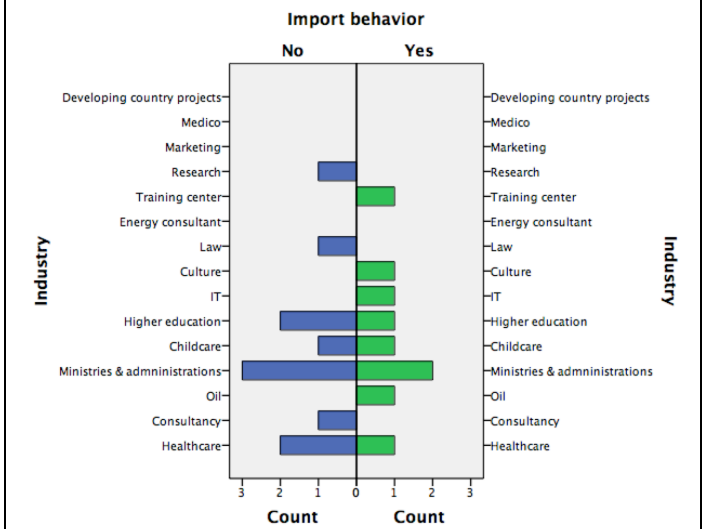
Thus, the graphs do not provide evidence that the predominance of removal of judgments in G1 and G2 could be explained by referring to the industries the participants in these groups work in.

All bars in the third graph are placed as symmetrically as possible (i.e. one participant difference when the total number of participants represented by the bar is uneven). Thus, this graph does not provide evidence that industry has any impact on whether participants experienced import of behaviour.

Table 6: Possible impact of industry







Private, public, or hybrid sectors: The three graphs below might indicate that participants from public sector organisations experienced *removal of judgments of self and others* more frequently than participants from private sector organisations. They might also indicate that participants from private sector organisations experienced *import of behaviour* more frequently than participants from public sectors.

It is possible to imagine that a more competitive environment in private sector organisations would make individuals more defended and, thus, less likely to let go of judgments. Inversely, the competitive environment in private sector organisations might make individuals more likely to

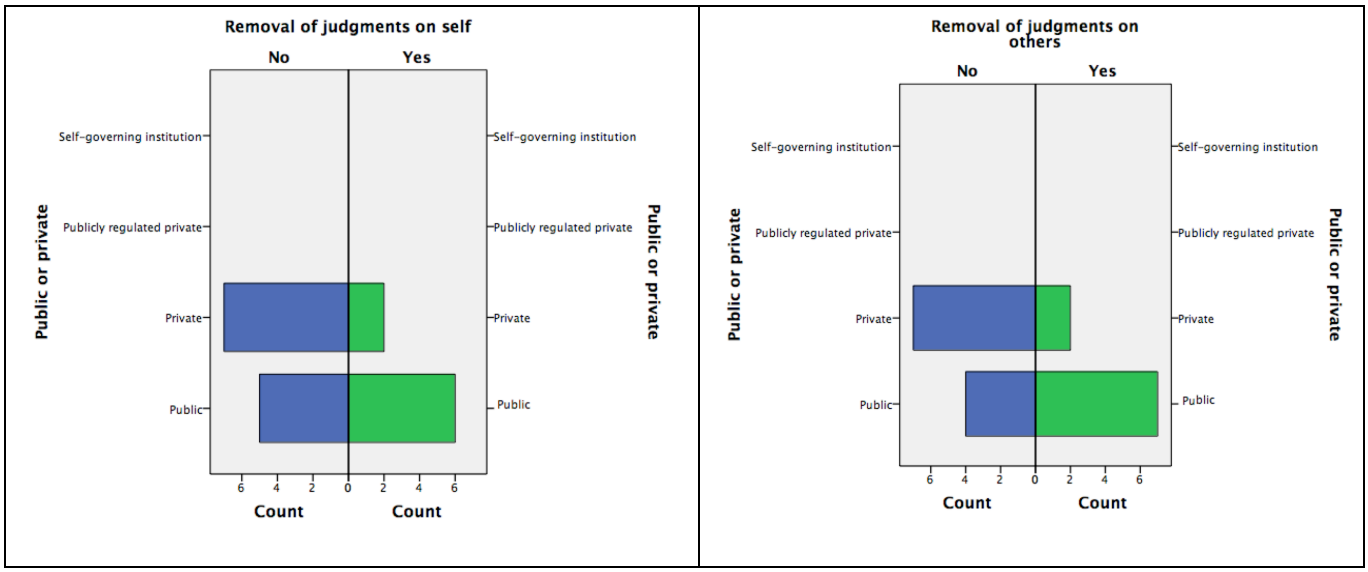
search in a wider range of contexts for solutions to problems, and thus more likely to experience import of behaviour.

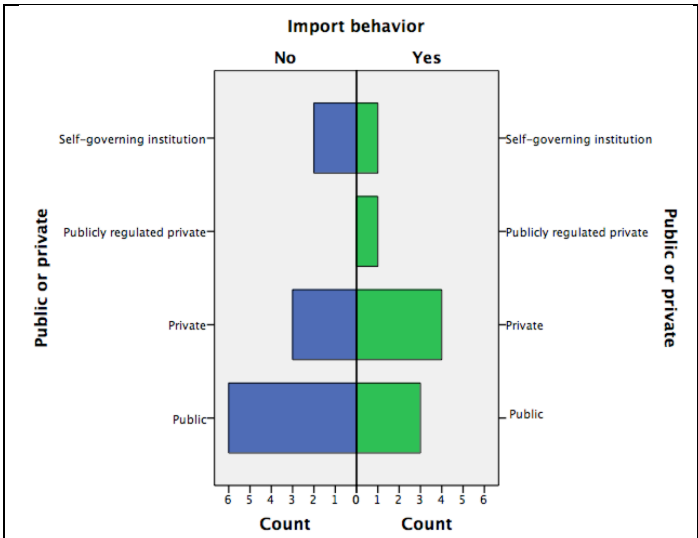
If G1 and G2 have more participants from public sector organisations than the other groups, this could explain the predominance of removal of judgments of self and others in these groups. G1 and G2 have 11 participants from public sector organisations, whereas G3 and G4 only have 9 and G5 and G6 also only have 9. However, two participants more from public sector in G1 and G2 cannot explain that these groups have 16 participants experiencing removal of judgments of self or others – against 5 in G3 and G4 and only 1 in G5 and G6.

If G3 and G4 have more participants from private sector organisations than other groups, this could explain the predominance of import of behaviour in these groups. However, G3 and G4 only have 7 participants from private sector organisations, against 9 in both G1 and G2 and in G5 and G6.

In conclusion, the predominance of the learning outcomes found in the above analysis could not be explained by referring to the sectors the participants in the various groups work in.

Table 7: Possible impact of sector





Gender: G5 has more men than any other group (7 out of 10) and G3 consists of 10 woman and no men. Therefore, it is worth checking if the data show any differences between men and woman in terms of removal of judgments or import of behaviour.

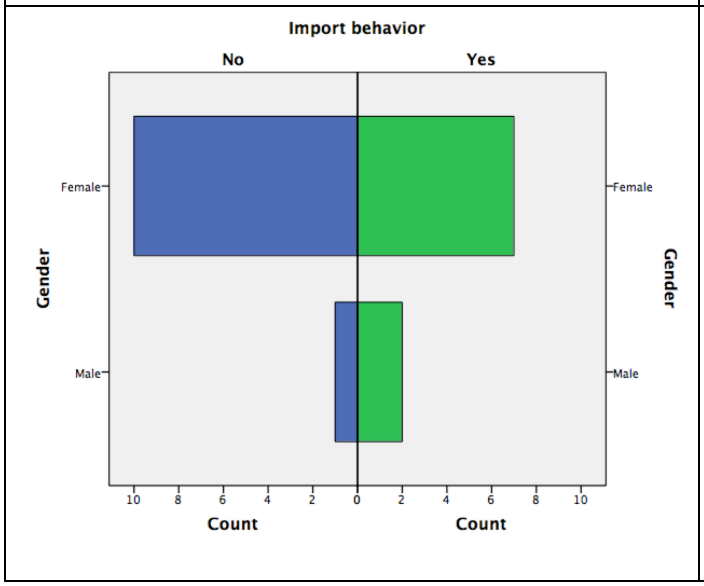
In the graph exploring removal of judgments of others, both the bar representing men and the bar representing women are placed as symmetrically as possible around the y-axis. The slight asymmetry in the bar representing men is simply due to an uneven total number.

The other two graphs might indicate that women are more likely than men to experience removal of judgments of self, whereas men are more likely to experience import of behaviour than women.

If G1 and G2 had more women than the other groups, this could explain the predominance of removal of judgments of self in G1 and G2. G1 and G2 have 14 women. This is more than G5 and G6, which have only 9 women, but it is less than G3 and G4, which have 17 women. Thus, gender does not seem to explain the predominance of participants experiencing removal of judgments of self in these groups.

If G3 and G4 had more men than the other groups, this could explain the predominance of import of behaviour in these groups. However, G3 and G4 only have 3 men in total, whereas G1 and G2 have 6 and G5 and G6 have 13.

In conclusion, there is no evidence that gender can provide an explanation for the predominance of either removal of judgment of self or others in G1 and G2 or for the predominance of import of behaviour in G3 and G4.



In this section, I have systematically explored whether *removal of judgments on self or others* and *import of behaviour* could be explained by referring to factors, such as, years of experience as a manager, years in the current position, number of employees, the time it took the participants to formulate their problem in the first meeting, which industry the participants work in, whether the participants works in the private, the public, or a hybrid sector, and participants' gender.

This is not the case. This strengthens my finding that *removal of judgments on self or others* and *import of behaviour* are, in fact, effects of the AI and the MI interventions respectively.

6. Summary of findings

In the above analysis, I found the following:

1. AI and MI facilitated two different types of changes in metaphors (which did not occur often through interviewing) and these corresponded to two different changes in the ways participants perceived and interacted with their problem.
    a. When participants perceive the problematic situation exclusively through primary metaphors (and not complex metaphors) their perception of, and interaction with, the problematic situation changes, so that judgments of self and/or others dissolves.
    b. When participants perceive the problematic situation through a new complex metaphor based on different primary metaphors rather than the complex metaphor they used before their perception of and interaction with the problematic situation changes so that they import behaviour forms unrelated contexts.
    c. Interviewing on its own could bring clarity, but without any of the above processes, this clarity would often be a reification of the current perception of the situation.
2. There are a number of links between the form of the concrete learning intervention and changes in perception and behaviour after the intervention
    a. The changes in perception/interaction particular to AI, MI, and the interview-procedure can be seen as an extension of the experience of these interventions.
    b. In some cases the participant's main learning experience was caused by experiencing a part of the process of the intervention, rather than by the content of the poems, photos, and drawings and the conversations about these.
    c. In some cases, learning to induce a new structure into a problematic situation was later used in situations beyond the original problematic situation.

The effects of MI and AI are illustrated in Figure 29 below. The squares represent the metaphorical possibilities. On each primary metaphor it is possible to create a number of complex metaphors. The picture is oversimplified, in that complex metaphors will usually be based on a number of primary metaphors. However, as discussed, there will often be one primary metaphor that is central to the way the problem is perceived. The arrows represent movements in metaphors and are labeled with the name of the intervention and the typical learning outcome resulting from this move.

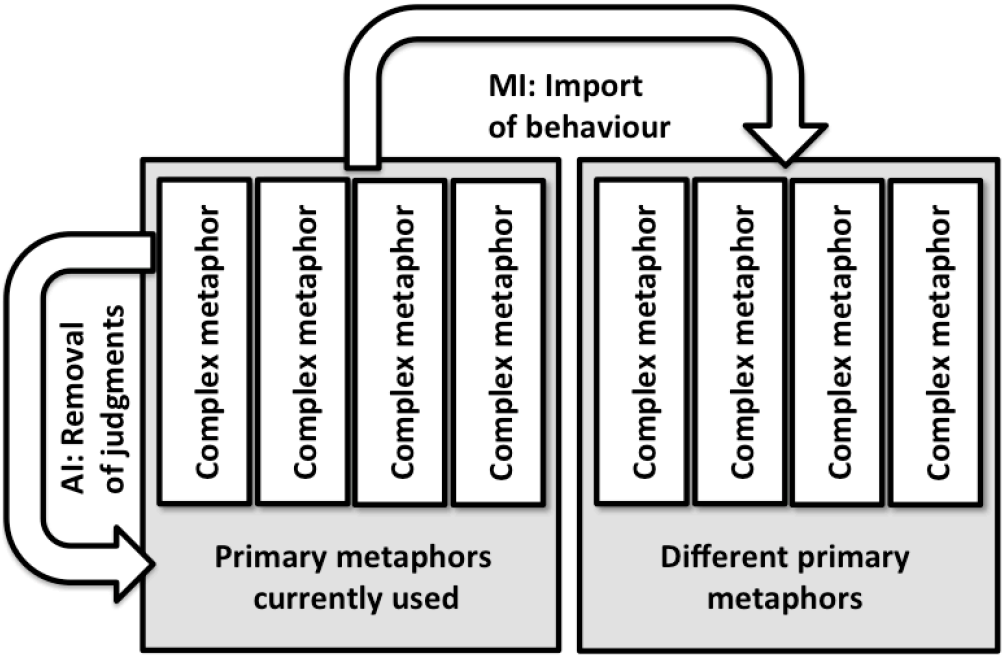


Figure 29: Metaphor movements

Next, I will discuss these findings in relation to literature and make claims about three contributions: One to CMT, one to the field of ABMs in management education, and one practical contribution.

7. Discussion and contributions

In this chapter, I discuss how the findings relate to literature and what contributions may be claimed on the basis of these findings. I will first present three main contributions.

1. **CMT:** CMT holds that our understanding is metaphorical in nature, and that there are two kinds of metaphors: Primary metaphors grounded in sensory experiences, and complex metaphors based on these primary metaphors. This research contributes to CMT by proposing (based in empirical evidence) that specific types of changes in the metaphors for a situation can be related to specific types of changes in perception of, and interaction with, this situation – exemplified by the two relations found. The idea that such relationships can be formulated is new.
2. **ABM:** In the literature review, I suggested that the research on ABMs is currently focused on exploring what kind of data ABMs can make visible and thus available for reflection. I suggested that this reveals an underlying representationalist view of cognition and suggested to look at ABMs from an embodied view of cognition. This research contributes to the field of ABMs in management education by proposing that the experiences participants have when going through a concrete learning intervention is not merely data for reflection, but has the potential to become tools for engaging with experiential data. For example, learning to make metaphors may reveal something new about the situation one is exploring, but it also teaches the tool of making metaphors. Similarly, focusing attention on sensory experiences related to a phenomenon may provide data about these sensations, but it also teaches the tool of focusing on sensory aspects of phenomena. In other words, the form of the ABM learning intervention is part of what is learned.
3. **Practice:** The purpose of the research was to find practically useful ways of explaining the learning processes ABMs can facilitate in management education. Together the contributions to CMT and ABMs offer guidelines for practice. In particular, they suggest that awareness of primary (sensory) metaphors is important when working with ABMs and that the entire experience of the learning intervention (the form of the learning intervention) is potentially an important aspect of what is learned.

I will start by providing a brief overview of each contribution before elaborating on each in detail in the following sections.

In my literature review, I argued that it would be useful to study ABMs from the embodied view of cognition. I showed how this view was more compatible with the core claims of thinkers on art and education used in the field of ABMs. I have also shown that the embodied view of cognition offered interesting perspectives on important themes acknowledged in the field of ABMs, such as, the importance of staying with the senses, aesthetic inquiry, and the process *making*. Concretely, I suggested using the concepts of primary and secondary metaphors from CMT as formulated by George Lakoff, Mark Jonson, and Joseph Grady; and the claims that 1) concepts are grounded in simulations, 2) abstract concepts are more related to introspective sensations, and 3) simulations support and enable action – all claims from simulation theory as formulated by Lawrence W. Barsalou. The purpose of the research was to find practically useful ways of explaining the learning processes ABMs can facilitate in management education.

Through my exploration of ABMs, I found that two specific types of changes in perception/behaviour (i.e. removal of judgments in self and others and import of behaviour) were linked to two specific types of changes in primary and complex metaphors (using primary metaphors without complex metaphors and using different complex metaphor based on different primary metaphors, respectively). For example, when P31 focused her attention on experiencing her own anger as heat (a primary metaphor) her judgment of this anger as a problematic character trait dissolved. Similarly, when P49 saw the problem in her management team as one of lack of relationship (based on the primary metaphor community is physical contact) instead of lack of common goals (based on the primary metaphor community is movement towards the same destination), then she discovered that behaviour she knew from the context of leading her employees, could be applied in the context of collaboration in the management team. Based on these findings, I now propose the more general claim that there is a connection between specific types of learning outcomes (changes in perception and behaviour) and specific types of changes in metaphors used to engage with a phenomenon. This claim is the contribution to CMT. This claim can be tested in future research with types of ABMs other than AI and MI.

I also make a contribution to the field of ABMs in management education. In the literature review, I showed how the majority of the literature on ABMs contains the assumption that ABMs are methods for making various forms of information available for various kinds of reflection. I also showed how this view is grounded in the representationalist view of cognition. Through the research, I found that the types of changes in metaphors, perception, and behaviour facilitated by the two ABMs could be seen as an extension of participants' experience of the concrete learning

intervention. In other words, they reflected the form of the learning intervention. Based on this finding, I claim that ABMs could be analysed in terms of what kind of experiences are made possible by the inclusion of art in the learning intervention, and in terms of how managers extend their experience of the learning intervention into their work life. This is a new way of focusing the research field, which makes it possible to distinguish ABMs from reflection and experiential learning interventions. From this perspective, the potential of ABMs is precisely that the experience of engaging in ABMs (the form of the learning intervention) can be different from the experience of engaging in reflection or experiential learning interventions. And changing the form of ABMs so they become more similar to the forms used in reflection or experiential learning interventions, may well change their content and thus undercut their potential.

Finally, the above theoretical contributions offer guidelines for practitioners in the field of ABMs. For example, if a facilitator sees a need to lessen the prejudices in a group, he can do this through exercises where awareness is focused on sensing and describing sensory perception without further interpretation through complex metaphors. Similarly, if a facilitator sees a need for radically new ideas for how to act in a situation, they can listen for what primary metaphors are currently used, and then do exercises where complex metaphors are created on the basis of different primary metaphors. In both cases, attention to primary metaphors is essential. Finally, facilitators need to be aware that everything in the experience of the learning intervention (the form of the learning intervention) is potentially part of the learning. This includes the relationship between participants, between participants and facilitator, and between participants and themselves, interactions during the lunch breaks, the general atmosphere, and how decisions are made about what to do during the intervention.

In the following three sections, I clarify these three contributions in detail. Afterwards, I formulate suggestions for future research. I then proceed to discuss a number of ideas for which the analysis of the data does not provide sufficient support, but which nonetheless are worth contemplating.

7.1. Contributions to CMT

The contribution to CMT (Grady, 2007; Johnson, 2007; Lakoff & Johnson, 1999) is the claim that specific types of changes in the metaphors for a phenomenon, can be related to specific types of changes in perception of, and interaction with, this phenomenon.

From literature, it is known that:

1. Human understanding is metaphorical in nature and these metaphors can be divided in complex and primary metaphors (CMT) (Grady, 2007; Lakoff & Johnson, 1999; Lakoff, 2012).
2. Concepts are grounded in simulations (simulation theories) (Barsalou, 1999, 2008)
3. Abstract concepts are more related to introspective sensations (simulation theories) (Barsalou & Wiemer-Hastings, 2005)
4. Simulations support and enable action (simulation theories) (Barsalou & Wiemer-Hastings, 2005)

The research showed that:

1. AI and MI facilitated two different types of changes in metaphors, which occurred rarely for participants who were only interviewed about their problems. These two types of changes in metaphors corresponded to two types of changes in the ways participants perceived and interacted with their problem.
    a. When participants perceived the problematic situation more through primary metaphors (rather than complex metaphors) their perception of, and interaction with, the problematic situation changed, so that judgments of self and/or others dissolved. For example, when P31 experienced her anger as 'heat' rather than as a 'character trait', this removed her negative judgment on her own anger as something that made her 'not likable'.
    b. When participants perceived the problematic situation through a new complex metaphor based on different primary metaphors, rather than the complex metaphor they used before, their perception of, and interaction with, the problematic situation changed so that they imported behaviour from contexts unrelated to the problematic situation. For example, P49 changed from seeing her problem as *lack of relationship*, understood in terms of physical contact, to seeing it as *lack of common goals*, understood in terms of movement towards same destination – a different complex metaphor based on a different primary metaphor. This change made her realise that behaviour from the context of leading her employees, could be used in the context of collaborating within the management team.

c. Interviewing on its own could bring clarity, but without any of the above processes, this clarity would often be a reification of the current perception of the situation reinforcing the current (non efficient) behaviour.

I will now discuss the meaning of these findings in relation to CMT.

7.1.1. Primary metaphors and judgments

The first of these findings seems to suggest that *evaluative judgments are specifically connected with complex metaphors* – not primary metaphors. Some of these judgments can be seen as *metaphorical residue*, i.e. unintended effects on perception/action caused by evaluating elements in the target domain using connections known from the source domain. It is interesting to consider that simulations representing abstract concepts contain more introspective material than concrete concepts (Barsalou & Wiemer-Hastings, 2005) It is possible that *grounding abstract concepts in introspective experience to a higher degree removes such metaphorical residue* and increases the usefulness of abstract concepts. These three ideas are all examples of how changes in metaphor match changes in perception/action. In the following, I clarify these ideas in detail.

Evaluative judgments are specifically connected with complex metaphors: Describing the problem through primary metaphors alone had the effect of dissolving judgments that participants had around other peoples' behaviour/motives and/or around their own emotional states. This finding seems to suggest that evaluative judgments are specifically related to complex metaphors and not to primary metaphors. Seeing a phenomenon in terms of sensory and motor experiences, such as, up/down, centre/periphery, hot/cold, smooth/textured, heavy/light, etc. does not offer the possibility to judge something as negative (or positive). Evaluation is only possible when these sensory experiences are placed in a larger context, such as the source domains used in complex metaphors. For instance, if one sees emotions as burdens to carry (complex metaphor), then heavy is bad and light is good. By contrast, if one sees arguments as something that should be difficult to move (complex metaphor), then heavy is good and light is bad. It is the source domain that determines whether heavy and light are good or bad. Thus, the removal of judgments experienced in AI can be understood as a result of focusing on experiencing the problem through primary metaphors, without making them part of any complex metaphor. In other words, removal of judgment can be seen as the result of experiencing a

problem in terms of sensory-motor experience, without placing this sensory-motor experience in a larger context in which it can be evaluated.

For instance, P31 initially called her own emotional state in the problematic situation *anger.* Furthermore, she saw anger as something that made her unlikable (negative judgment). When she focused on experiencing her own emotional state in terms of sensory experience, she experienced it as *heat*. There is nothing likable or unlikable about *heat* in itself. This dissolved the judgment around her emotional state. Later this emotional state got placed in a new complex metaphor where she saw the sensation of heat as a state of being clear and direct (not angry). She did not see this as particularly unlikable – and interestingly enough, even her concern with being likable seemed to dissolve. It is possible that this concern was specifically connected to the use of the word *anger* and the complex metaphor this word implied to her. That changes towards primary (i.e. more sensory based) metaphors have the specific effect of dissolving judgments can be seen as an example of the more general claim, that specific changes in metaphors for a phenomenon can be related to specific types of changes in perception of, and interaction with, this phenomenon.

Metaphorical residue: More generally, one can speculate that even though metaphors generally may support and enable certain perceptions/interactions with a phenomenon, they may at the same time have side effects – a kind of *metaphorical residue,* and that such metaphorical residue may cause a kind of *phantom problems*. The negative judgments discussed above would be examples of such metaphorical residue, but other forms of metaphorical residue may exist. For example, if an individual uses a simulation containing unpleasant sensory activation to engage with a phenomenon, it is very possible that this individual will perceive this unpleasant sensory activation as a problematic *part of the phenomenon itself* – something to be solved. However, if the unpleasant sensation is part of the simulation/metaphor used to engage with the phenomenon (not part of the phenomenon), it could be removed simply by changing the simulation/metaphor used to engage with the phenomenon, rather than changing the phenomenon.

For example, the unpleasant sense of restriction felt by P29 when she engaged with follow-up tasks, must be part of the simulation she activates when she wish to engage with such tasks. It is unlikely that any of her tasks involved actual physical restriction. Thus, the discomfort seems to

come, not from the tasks themselves, but rather from the simulation she activates in order to engage with the task. Similarly, P39 in her last interview described her problem:

> "…as if it is dissolved without being dissolved. It is not dissolved. It is unchanged. I experience the same sloppy meeting culture, but my experience of this as a big problem that takes up space in me is no longer there so much" (39:41:0.37)

This can be interpreted as if what has dissolved, which she describes as 'something that takes up space in her', could be part of the sensory experiences she used to reactivate, in order to interact with the situation, i.e. part of the simulation in which her concept of the situation was grounded. In other words, the discomfort she experienced, which led her to see the situation as a problem to be solved, could be the sensory experience she used to engage with the situation– rather than the sensory experience created by the physical interactions in the situation.

Following this line of thought could bring one to ask the question: How many situations do individuals try to avoid because they reactivate unpleasant physical sensations *as a way to engage with this situation* – and then mistakenly think that these unpleasant sensations are properties of the situation itself. And inversely, how many situations or objects do individuals pursue because they make sense of these situations or objects using simulations that are pleasant and they mistakenly believe that the pleasant experiences are *caused by* or *part of* the situation or object.

That the same situation can be perceived as problematic or unproblematic, depending on the metaphor used to perceive this situation through also supports the general claim that specific types of changes in the metaphors for a phenomenon can be related to specific types of changes in perception of, and interaction with, this phenomenon.

Grounding abstract concepts in introspective experience to a higher degree removes such metaphorical residue: Barsalou and Wiemer-Hastings (2005) claim that abstract concepts to a higher degree than concrete concepts are based in simulation of introspective experience. Such introspective experience includes inner states without direct references to external circumstances. The above discussion of *metaphorical residue* offers an interesting perspective on why abstract concepts to a higher degree are grounded in such introspective experience. It is possible that the kind of confusion described above as metaphorical residue, can be lessened if abstract concepts to a higher degree are based on introspective experience. In particular, it is possible that *phantom problems* described above, could be lessened if abstract concepts were

grounded in pleasant (or at least neutral) introspective experience. Clearing abstract concepts of metaphorical residue through grounding them in pleasant or neutral introspective experiences, could very well be an area of management education for which ABMs are especially well suited.

This line of thinking also matches the main claim that specific types of changes in the metaphors for a phenomenon can be related to specific types of changes in perception of, and interaction with, this phenomenon. Specifically, changing the metaphors used to engage with abstract concepts so these are more grounded in pleasant or neutral introspective experience may dissolve a long range of perceived problems in situations where these abstract concepts are used. If, for example, commitment is grounded in a simulation of physical restriction, this will make all situations relating to commitment problematic, in that they will all feel restrictive. Grounding the concept of commitment in an internal sense of stability and support will remove the sense of physical restriction from all situations relating to commitment. Grounding commitment in the sensory experience of the stability of Being, with which meditators are familiar, may remove an even broader range of metaphorical residue. In fact, the various sensory experiences of Being, which meditation practitioners are familiar with, seem like a particularly apt grounding for abstract concepts. This may well be a way to explain the documented benefits of meditation. However, it is beyond the scope of this thesis to explore this in detail.

7.1.2. Complex metaphors and import of behaviour

The second of the findings mentioned above was that when participants perceive the problematic situation through a new complex metaphor based on different primary metaphors, their perception of, and interaction with, the problematic situation changes, so that they import behaviour from previously unrelated contexts. This finding suggests that primary metaphors *limit* what perception/action any complex metaphor based on these primary metaphors can enable. It also suggests that primary metaphors may be part of how individuals *define and separate contexts*. Finally, it suggests that problems may seem *unsolvable* because the primary metaphor currently used does not allow any complex metaphors, which would enable efficient action. Again, these three ideas are examples of the claim that changes in metaphors match changes in perception/action. In the following, I clarify these ideas in detail.

Limiting effects of primary metaphors: From literature we know that primary metaphors place limits on what complex metaphors can be formulated. If these complex metaphors are used to enable action, then primary metaphors also place limits on how it is possible to perceive and

consequently interact with a phenomenon. For example, in the last interview P49 saw her problem as a problem of underdeveloped relationships among the managers in the management team, and consequently she got the idea of interacting with the problem by trying to develop such relationships. This perception/interaction only became available to her when she based her complex metaphors on a primary metaphor in which she saw community in terms of physical connection. As long as she based her complex metaphors on a primary metaphor in which she saw community in terms of movement towards the same destination these metaphors could not have made the above perceptions/interaction available to her. Thus, primary metaphors may limit what actions are available by limiting what complex metaphors an individual can create.

Primary metaphors and contexts: Furthermore, it is interesting that the participants experienced the new perception/interactions they found when changing the primary metaphors as perception/interactions they knew *from a different context*. This suggests that there may be a connection between the primary metaphors we use and how we divide our life into different categories. For example, P49 experienced her work with the management team and her work with her team of employees as two different contexts. It is possible that part of what defines a context and separates it from other contexts are the primary metaphors used in this context. In other words, maybe P49 experienced her work with the management team and the employee team as two different contexts, partly because she saw the first through the primary metaphor of achieving common movement and the latter through the metaphor of achieving physical connection. It is interesting to ask whether P49 using the physical connection metaphor for both her work with the management and the employee team will make her experience this work more as one context instead of two.

Primary metaphors and perceptions of problems as unsolvable: Finally, as all participants dealt with problems they initially perceived as unsolvable, and as primary metaphors may place limits on complex metaphors and consequently may limit what perception/interactions are available to the individual, it is worth asking how often the unsolvable nature of a problem is due to the use of primary metaphors that only enable complex metaphors supporting inefficient perception/interactions. For example, P49 had spent a long time trying to solve her problem, but all of her possible solutions were based on the movement towards same destination metaphor – and maybe the very use of this primary metaphor is the reason the problem appeared unsolvable.

To sum up, whereas different complex metaphors may enable different perceptions/interactions, changes in primary metaphors may open whole new fields of possible perception/interaction. Changes in primary metaphors may furthermore relate to the perception of what context one is operating in. Finally, changes in primary metaphors may change whether a problem is perceived as solvable or unsolvable. These are all examples of the more general claim that specific types of changes in the metaphors for a phenomenon can be related to specific types of changes in perception of and interaction with this phenomenon.

7.1.3. Interviewing and increased clarity

The third of the findings mentioned above was that interviewing on its own could bring clarity, but this clarity would often be a reification of the current perception of the situation. In these cases there were either no changes in metaphors or only changes to different complex metaphors based on the *same* primary metaphors. Again, there is a match between such elaborations of the primary metaphors currently used and the resulting sense of increased clarity about own point of view.

In conclusion, the research contributes to CMT by proposing (based in empirical evidence) that specific *types* of changes in the metaphors for a situation can be related to specific *types* of changes in perception of and interaction with this situation. This link has not previously been proposed in CMT.

7.2. Contributions to ABMs in management education

The contribution this research makes to the field of ABMs in management education is a perspective where ABMs are seen as methods for producing experience that managers later can use as tools to structure their experience of work life. This is a new way of focusing the research field, which makes it possible to clearly distinguish ABMs from reflection and experiential learning.

From this perspective, the potential of ABMs is precisely that the experience of engaging in ABMs is different from the experience of engaging in reflection or experiential learning. And changing the form of ABMs so they become more similar to the forms used in reflection or experiential learning interventions, may well change their content and thus undercut their potential.

Furthermore, if the experience of the concrete learning intervention is later used by participants to enable and support new ways of perceiving and acting in work life, then future research on

ABMs should focus on analysing what experience the inclusion of art and art processes in learning interventions enable and what the effects of having had these experiences are on managers' perception of/action in work life.

This focus is different from the current focus, predominant in the research field, on arguing what kind of data ABMs make visible (unconscious material, complexity, power relations, emotions, aesthetic aspects of experience, etc.), what learning outcomes they produce (increased creativity, increased ability to be in complexity, etc.), or what (known) learning processes they facilitate (reflection, reflectivity, transformative learning, etc.).

In the literature review, I argued that ABMs are currently seen as methods for producing data for reflection and that this view is based on the representationalist view of cognition. I further argued that this view prevented satisfactory explanations of themes of, such as, the importance of staying with sensory experience without reflecting, the aesthetic agency that emerges from paying attention to the senses, and the healing effects of the process Taylor and Ladkin (2009) has called *making.* I also argued that viewing ABMs as methods for producing data for reflection, leads scholars to omit central claims of the philosophers on art and education they refer to. For example, Langer's (1951) claim that what is created in the act of art creation is concepts and Arnheim's (1969) claim that perceptual shapes are the flesh and blood of thinking rather than products of thinking.

To remedy this, I proposed to use CMT and simulation theories, two theories based on the embodied view of cognition, to explore ABMs in management education. I argued that these theories offered interesting perspectives on how to explain the importance of staying with the senses, aesthetic agency, and the process of making. I proposed that the importance of staying with the senses could be that by staying with sensory experience without reflecting on it (i.e. without treating it as data to be structured in terms of past experience), the present sensory experience could become a tool for structuring future experience. I proposed that aesthetic agency could be seen as the action that is enabled when new tools for structuring experience are achieved in this manner. Finally, I proposed that the process of making, could be seen as the process of creating the tools we use for engaging with the world – tools that becomes so familiar to us, that it is appropriate to describe this process as *creation of the creator*.

7.2.1. Creation of data or tools

Seeing the experience created by ABMs either as *data for reflection* or as *tools for enabling and supporting particular ways of perceiving and acting,* are two alternative metaphors through which one can understand the nature of the experience created in ABMs. Rather than trying to determine which is more correct (which does not really make sense when speaking about metaphors) in the following, I look at how useful these two metaphors are in making sense of the research findings.

In the research I found that:

2. There are a number of links between the form of the concrete learning intervention and changes in perception and behaviour after the intervention
    a. The changes in perception/interaction particular to AI, MI, and the interview-procedure can be seen as an extension of the experience of these interventions.
    b. In some cases the participant's main learning experience was caused by experiencing a part of the process of the intervention, rather than by the content of the poems, photos, and drawings and the conversations about these.
    c. In some cases, learning to induce a new structure into problematic situation was later used in situations beyond the original problematic situation.

In the following, I argue that each of these findings is easier to explain by using the tool metaphor than using the data metaphor.

The changes in perception/interaction particular to AI, MI, and the interview-procedure can be seen as an extension of the experience of these interventions: The first of the above findings was that, not only does particular changes in metaphors match the particular changes in perception/action that follow, but these changes can be seen as extensions of the experience of the concrete learning intervention. For example, importing behaviour to the context of the problematic situation from a context not normally linked with this situation – or even with the context of work – can be seen as an extension of the experience of playing with creating metaphors linking domains of life that are not normally linked, which was a central part of the MI process. Similarly, removing judgments of self and others can be seen as an extension of experiencing that it is possible to perceive the problematic situation through sensory experience, without evaluating this experience as good or bad, which was a central part of the AI process.

Seeing the experience produced by AI and MI as data for a reflection process, does not offer an explanation for why there would be such a match between the way the experience is produced and what is learned. One could argue that AI and MI apparently produce different kinds of data and that reflection on different kinds of data may produce different kinds of learning outcomes. However, it seems difficult to explain why reflecting on a particular kind of data should make participants learn to act in ways, which reflects the ways participants acted in order to produce this data. However, seeing the experience of the learning intervention as the construction of a particular tool for perception and action does explain why the resulting learning outcomes seem to be variations of this experience. For example, that learning to import behaviour is a result of connecting many previously unconnected elements many times during the MI process, seems more plausible than saying that learning to import behaviour, is a result of producing and reflecting upon a particular kind of data in the MI process.

In some cases the participant's main learning experience was caused by experiencing a part of the process of the intervention, rather than by the content of the poems, photos, and drawings and the conversations about these: The second of the above findings was that parts of the experience of the learning intervention, not intended to facilitate learning, were also used by participants as tools to enable and support new ways of perceiving and acting. For example, in some cases the limited time available for writing the poem, which was set due to practical concerns and not intended to facilitate learning, created the experience of presenting emotions (aggression) in an unpolished version. However, the experience of presenting emotions in an unpolished form was later used when P31/G2 lead a meeting, where she clearly stated which points on the agenda were not up for discussion or when P58/G1 read her poem to her colleagues to whom she never previously had presented her frustration so directly. Another example is the experience of looking at the same problem using different media and noticing that each media provide different important insights into this problem. This experience was not part of the intervention design. The reason for using three different kinds of media in the intervention was that different participants may have different levels of ability in working with each media – and I wanted all participants to work in at least one media they felt reasonably comfortable with. However, P4/G4 used this experience to structure his communication with his colleague, when he spoke with him not as an opponent but rather as a medium who could provide him with important insight into a problematic situation. In short, because he had experienced poem, photo,

and drawing, providing different, important information about the issue he explored, he had come to see himself as a poem and his colleague as a photo and approached his colleague

Such reproduction of parts of the experience seem better explained by viewing the experience produced by the learning intervention as a tool for enabling and supporting a particular perception and action, than as data for reflection. In his exploration of what education can learn from the arts, Eisner claims that: "Education can learn from the arts that form and content cannot be separated. How something is said or done shapes the content of experience." (Eisner, 2009, p. 1). In other words, the experience of the learning intervention, the way in which things are said and done in the concrete learning intervention as it happened, is part of what is taught. The two first of the above findings seems to be empirical evidence for this claim. The form of the AI and the MI process is part of the content of the learning intervention. Even the parts of the form of the learning intervention, which was not central to the design as I thought it, also became part of the content of the learning intervention. Dewey's continuation principle also expresses this phenomenon. This principle, put simply, states that any current experience will impact all future experience – for better or for worse. Using the *experience as data* metaphor, where experience is seen as something one can pick up and reflect upon if one wishes to do so, obscures the continuity aspect of experience, i.e. that any present experience impacts all future experience. In particular, the *experience as data* metaphor obscures that the *way in which data is produced* (the experience of the totality of the learning intervention), not just *what* data is produced, has an impact on participants' future experience. By contrast, the 'experience as a tool' metaphor highlights these phenomena.

In some cases, learning to induce a new structure in to a problematic situation was later used in situations beyond the original problematic situation: The third of the above findings was that when participants found new ways of perceiving and acting, these were sometimes applied in situations beyond the problematic situation they initially wished to solve. Again, this phenomenon may be better explained by seeing experience as a tool which can be applied to many situations, rather than seeing it as data about a particular problematic situation.

7.2.2. Researching ABMs beyond AI and MI

The 'experience as tool' metaphor enables the formulation of new questions in the field of ABMs in management education. If important learning outcomes of ABMs can be seen as the effect of participants experiencing *the form of the learning intervention itself*, then the experience of going

through the learning intervention becomes central to the analysis of ABMs (or learning interventions in general for that matter). Instead of analysing ABMs in terms of what kind of data they can produce, what learning outcomes they produce, or what learning processes they facilitate, one could analyse ABMs in terms of what kind of experiences the inclusion of art enables, and what the effects of having had these experiences are on perception/action in work life.

It is important to point out, that the present research only explores two particular ways of including art and art processes in the learning intervention (AI and MI). It is possible to imagine that other ways of including art and art processes in learning interventions will produce radically different kinds of experiences. However, it is possible to get a sense of what these experiences may be, when one reads Elliot Eisner. Eisner often structures his writings around a list of "forms of thinking the arts evoke" (Eisner, 2003, p. 373) or lessons that education can learn from art (Eisner, 1992, 2002, 2003).

Eisner proposes that through engagement with art, one can develop forms of thinking, such as, "Not all problems have a single, or correct answer…. The form of a thing is part of its content…. Having fixed objectives and pursuing clear-cut methods for achieving them are not always the most rational ways of dealing with the world" (Eisner, 1992, p. 594), that art enables, not only expression, but also discovery (Eisner, 1992, p. 595), and "the ability to compose qualitative relationships that satisfy some purpose" (Eisner, 2003, p. 377).

A number of such 'forms of thinking' were visible in the research. Including that questions can be answered through sensing, that art can teach us to sense new aspects of the world, art can teach us that the medium is part of the message, and art can teach that play is a powerful mode of interacting with the world. I now expand a bit on each of these.

Questions can be answered through sensing: To answer the question: "*What does this apple taste like?" one can simply take* a bite and pay attention to the sensory experience. Creating art offers the experience of answering questions through paying attention to sensory experience. To answer questions of the type: *"How does it feel if I change the colour of a compositional element in a painting?"* one can simply change the colour and sense the effect. To answer the question: *"Will the music create more of the mood I wish to create if I change a chord?*" one can simply play the music with the new chord to sense the effect. Art history is full of examples of artists who explore questions by creating art and paying attention to sensory experience created by their pieces.

Mark Rothko explored how to create large paintings of glowing colour. Bennett Newman explored how to create paintings that are a unified field rather than separate objects forming a composition. Degas explored how to paint dancers in a way, so the still picture still gave an impression of motion. Kazimir Malevich explored how to create paintings without reference to the natural world. Answering questions through reception of sensation is part of learning the way of thinking Eisner calls "the ability to compose qualitative relationships that satisfy some purpose" (Eisner, 2003, p. 377).

Such ability to compose qualitative relationships was visible in several of the participants learning journeys. For example, P26 began using *regular meetings* as a way of giving acknowledgement and motivating a particularly skilled and difficult specialist employee; P41 began testing his ideas about where the organisation might be going through directly asking instead of observing and drawing inferences; P46 began using silence instead of giving her opinion; P13 began talking to the department boss instead of the employees, to heighten employees' moral; P19 let go of control in a context in which he normally looked for ways to obtain control. The elements the managers in these examples use are meetings, types of dialogue, silence, selecting people to include in a conversation, and giving or taking control. What the above examples have in common, is that the managers changed such elements and *sensed* the effect of such changes, to ascertain if these compositional experiments would bring them closer to their purpose.

Art can teach us to sense new aspects of the world: Creating art can also enable the experience of learning to sense things one could not sense before, or to make more refined sensory distinctions. Through the process of changing the painting, the photography, the musical composition, the choreography, and noticing the effects, artists learn to sense subtle differences in colours, spatial compositions, chord structures, or body positions and movements. Simply to experience that it is possible to refine one's ability to make sensory distinctions, may have an impact on how managers conceive problems and solutions in their work. This relates to Eisner's claim that engagement with art enables discovery.

P13 began to distinguish between pushing something that was heavy to move and pushing something with friction. This allowed her to discover the source of friction. P31 began to distinguish between the blurry sense of confusion and the sharp sense of anger. This allowed her

to discover that she used confusion to cover anger. Both can be understood as examples of how increased sensory distinctions enabled discovery.

The medium is part of the message: Creating art in different media (poetry, photography, and painting) can also enable the experience of how different media capture different aspects of reality. Art history holds many examples of artists who change the media they work in, because they find that a different media is better able to capture what they wish to explore. My data suggest, that experiencing how different media are able to capture different aspects of reality was central to P4's learning journey. Having this experience enabled him to appreciate his co-workers ability to capture aspects of the situation he himself could not capture. In other words, he began to think of his co-worker as a different medium than himself. This is part of the more general form of thinking, which Eisner calls the interaction of form and content. Since the medium is an important part of the form, it is also an important part of the content.

Play is a powerful mode of interacting with the world: Many participants mentioned that going through the art processes gave them an impactful experience of approaching problems with a playful attitude and of exploring problems through something that occurs in the present – rather than through analysing the past or imagining the future. Eisner describes this state in the following, highly enlightened way:

> "In the arts ends may follow means. One may act and the act may itself suggest ends, ends that did not precede the act, but follow it. In this process ends shift; the work yields clues that one pursues. In a sense, one surrenders to what the work in process suggests. This process of shifting aims while doing the work at hand is what Dewey called 'flexible purposing' (Dewey, 1938). Flexible purposing is opportunistic; it capitalizes on the emergent features appearing within a field of relationships. It is not rigidly attached to predefined aims when the possibility of better ones emerges. The kind of thinking that flexible purposing requires thrives best in an environment in which the rigid adherence to a plan is not a necessity. As experienced teachers well know, the surest road to hell in a classroom is to stick to the lesson plan no matter what. The pursuit or at least the exploitation of surprise in an age of accountability is paradoxical." (Eisner, 2003, p. 378)

7.2.3. Distinguishing ABMs from reflection and experiential learning

Analysing ABMs in this way provides a useful way to distinguish ABMs from other learning interventions, such as, reflection and experiential learning. The inclusion of art-based media and

processes makes it possible to create experiences during the learning intervention that differ from the experience of going through interventions based on reflection or experiential learning. Or in Eisner's words, *ABMs have a different form than reflection or experiential learning and this form is part of the learning intervention's content.*

For example, reflection, as it is described in Argyris and Schön's double-loop learning, takes on the form of exposing how participants operate from wrong assumptions about their environment and correcting these. Experiencing this form may support and enable actions of critical and suspicious challenging of own and others' assumptions about reality. This can be very useful, but it is very different from the experience described above of answering questions through receiving sensory experience or refining one's ability to make sensory distinctions.

Similarly, experiential learning as it is described in Kolb's learning cycle, takes on the form of learning through an iterative trial-and-error process. Experiencing this form may naturally support and enable actions of trying to shorten the amount of iterations necessary to reach a desired outcome, looking for errors, and valuing the final outcome more than the process. Furthermore, it gives a central position to reflection (in terms of evaluating outcomes of one experiment and planning the next). This is different to the experience of the learning process as play, i.e. as something worth engaging in for its own sake, and the process through which purpose and goals are discovered through the acts of learning.

Thus, from this perspective, the potential of ABMs is precisely that the experience of engaging in ABMs is different from the experience of engaging in reflection or experiential learning. And changing the form of ABMs so they become more similar to the forms used in reflection or experiential learning interventions, may well change their content and thus undercut their potential. This perspective is the main contribution to ABMs.

This view enables a new approach to research on ABMs in management education, including new questions for research, such as:

- What kinds of experience does the inclusion of art and art processes in learning interventions enable?
- How does having had these experiences impact the way managers perceive and act?

7.3. Practical contribution

The above discussion of contributions to theory also has implications for practice. The two main practical contributions are:

1. Awareness of primary (sensory) metaphors is important when working with ABMs (or when working with seemingly unsolvable problems through other methods).
2. The experience participants have during the concrete learning intervention is an important part of what is learned and it is, therefore, important to take time to sense this experience.

Removal of judgments was brought about when participants focused on describing the problem through primary metaphors – separate from complex metaphors. For example, when P31 described anger as 'heat', instead of as 'a problematic character trait'. Import of behaviour was brought about when participants saw the problem through complex metaphors based on different primary metaphors than the ones they habitually used. For example, when P49 saw her problem as lack of relationship, understood in terms of physical contact contact, instead of lack of common goals, understood in terms of movement towards the same destination. In both cases primary metaphors played an important role. In contrast, the analytical reflection carried out during the interviews was done without any specific attention to primary metaphors, and here the result was a reification of the current view, which did not change the seemingly unsolvable nature of the problem.

When asked to formulate problems that appeared unsolvable, 47 out of the 60 participants formulated problems concerning how to deal with other's lack of initiative, willingness to collaborate, positivity, or ability to learn. In short, they formulated problems where a negative judgment about others played a central role. If these problems can truly be made solvable by paying attention to primary metaphors, as the research suggests, then it is possible that a considerable percentage of the problems managers perceive as unsolvable problems can be efficiently approached through attention to primary metaphors (if the research is in any way representative for a broader population of managers).

The importance of paying attention to primary metaphors has practical implication for facilitators working with ABMs in particular or with management education in general.

First, it brings into question the assumption present in large parts of the literature on ABMs in management education, that the artistic intervention should be followed by or punctuated by

reflection where learning is extracted from the experience and linked to work. Reflection where learning is formulated, may serve to give participants a sense that the learning intervention is valuable because they can explicitly say what they have learned after the intervention. However, such formulation of learning may well serve as a reification of the participants' current views, as was the case in the interviews. It may be more valuable to formulate which primary metaphors seem new and interesting to participants, *without* formulating what impact these may have on future action at the workplace. Such impact may need to be discovered rather than predicted. Thus, facilitators of ABM could experiment with sending participants back to work with new, interesting experiences leaving them to discover what happens when these meet the experience of work – rather than insisting on formulating wrapped up insights that just need to be implemented back at work. Especially, since such implementation often seems to be a problem in itself.

Second, attention to primary metaphors is not the norm in management education in general. It is very possible to imagine that problem solving through analytical reflection of the kind that are often practiced in management education (e.g. goal clarification, stakeholder analysis, swot analysis, etc.) can be carried out in a way that does not change the primary metaphors used to understand the situation analysed. Therefore, there is a real risk that such methods, like the interviews, may end up bringing a sense of clarity, but a clarity that consolidates and makes participants better at arguing their own, current point of view. In groups 5 and 6 the participants all did a thorough stakeholder analysis as part of the interviews. Many were enthusiastic about this method and expressed the feeling that it really clarified things for them. However, 17 out of 20 either became clear about why the problem was unsolvable or became clear about that what they already did was right and that they should simply do more of this – in spite their initial statement that this course of action had never worked satisfactorily. If the problems had been of a kind the participants *did* know how to solve, such clarity might have been useful. However, when dealing with problems that appear unsolvable to participants, it may be important for the facilitator to actively encourage changes in primary metaphors, i.e. in the sensory-motor experiences used to represent the problem, even if they do not use ABMs. This point became very clear when Ian Sutherland and myself facilitated a two day workshop about leading and following with a group of executive MBAs. Even though these had been through an entire MBA programme it seemed that the extensive analytical reflection they had been through (which included working with personality tests and familiarising themselves with various leadership theories) had had

very little impact on their ability to take leadership in unfamiliar situations (Springborg & Sutherland, 2014).

Finally, the observation that different primary metaphors might be connected to different contexts is interesting for management educators in general. Simply asking managers to imagine how they would solve the problems they encounter in their work if they found them in a different context, might be a practical tool to facilitate the shifts in primary metaphors – even without the use of art. However, this type of intervention would have to be tested in future research.

The second practical contribution was that the experience *is* the learning. This also has a number of practical implications for facilitators working with ABMs in particular, or with management education in general.

When placing emphasis on experience as the teaching, then the distinction between the experience itself and the words one may use to label this experience becomes central. In particular, it becomes of central importance to spend time on sensing. For example, if a facilitator in management education wishes to facilitate the letting go of judgments through the AI process, it is more important to help the participants spend time on sensing the sensory-motor experiences through which they understand a problem, than it is to help them select a word for them, i.e. to settle on a linguistic formulation of the primary metaphor. It is not finding the name that has an effect, as this name is not a substitute for the experience. What is important is staying with the sensation – and sometimes deciding on a word to quickly can stop this.

Furthermore, when using words to describe the primary metaphor, these words reactivate sensory experience themselves and in this way add to the experience. Gendlin (1997) points out that metaphors, such as 'anger is a heated liquid' or 'affection is warmth', do not exist before the linguist formulates it. However, according to simulation theory, the simulations that guide our actions do exist, regardless of whether a linguist creates labels for them or not. Thus, one may say that metaphors, used to perceive and act, exist as simulations, but that the moment words are used to formulate these metaphors, the activation used to understand these words are added to the experience. In this way, any formulation of a primary metaphor may inevitably, to a greater or lesser degree, bring with it some wider context or complex metaphor.

For example, P21 described his sensory experience of his problematic situation using the Danish word 'indefrossen' which literally means 'frozen in'. This word clearly refers to the sensation of cold. However, it also refers to a state of withheld anger or passive aggressiveness. Thus the word

automatically judges the sensation of coldness as something very negative. Even if P21 had used a more neutral word, such as *cold*, this is still a word that has been used in relation to many complex metaphors that has placed the word in evaluative contexts. Thus, the moment a word is used to describe the primary metaphor, the history of this word may add something to this metaphor. Thus, if experiencing through primary metaphors is a matter of experiencing a phenomenon in terms of sensory-motor experience, then this action is not exactly the same as *naming* this sensory experience, since naming is already evoking complex metaphors. Naming the sensory experience can be seen as a way to describe the experience that already happened wordlessly. For example, when in AI, the participants spent time on creating poems, photographs, and drawings that evoked the same sensory experience as the problematic situation they are exploring, it can be seen as an activity that makes them spend time sensing the actual sensory experience they use to represent the problem – i.e. the simulation. The minute this simulation is called something, the words used are likely to evoke a complex metaphor and, thus, a context for evaluation of the sensory experience. To lessen this effect, it is important to encourage the use of 'neutral' sensory words (i.e. the sensory word cold rather than value laden word 'indefrossen') and to encourage taking time to sense, before putting words to the sensation.

The two practical contributions discussed in this section seem valid for the facilitation of AI and MI, probably valid for other ABMs as well, and possibly valid for management education in general, when engaging with problematic situations the participants do not know how to deal with.

7.4. Future research

Above, I have suggested several areas for future research. In this section, I summarise these and provide further suggestions for future research.

7.4.1. New focus for research on ABMs in management education

The main contribution to the field of ABMs in management education was the view of ABMs as methods for producing experience that later could be used to enable and support particular ways of perceiving and acting. This view brings a particular perspective to the field of ABMs in management education. From this perspective, future research should focus on asking:

- What kinds of experience does the inclusion of art and art processes in learning interventions enable?

- How does having had these experiences impact the way managers perceive and act?

Answering these questions could include an analysis of the kind of interactions participants may experience with each other, with the facilitator, and with their own moment-to-moment experience during interventions where art and art processes are included. I believe this is a more fruitful focus than the focus on defining what kind of data ABMs enable participants to reflect upon, or what learning outcomes or even what learning processes ABMs facilitate.

To illustrate this focus further, one could say that the AI uses art creation to create an experience of non-evaluative, sensory perception, and that managers can learn to let go of judgments about others or about themselves from having this experience. Similarly, MI uses art creation to create an experience of connecting previously unconnected experiences, and managers can learn to import behaviour.

I will now look at some more specific research projects this general research programme could include.

7.4.2. Other ABMs beyond AI and MI

AI and MI are just two particular ABMs. Future research could explore what kind of art-based processes beyond AI and MI are used today, and whether these also generate learning outcomes that match the experience enabled by their particular way of using art in the learning intervention. To give an impression of the breadth of the ways in which ABMs use art, consider the following types of ABMs:

Sometimes, the managers will create the metaphors themselves using art-based media (as in MI). In other cases, the facilitator will select works of art that he thinks are good metaphors (Cowan, 2007). In yet other cases, an artist is commissioned to create works of art for a specific organisation that will create debate and raise awareness about specific organisational issues or themes (Barry & Meisiek, 2010b). Sometimes the metaphors will represent a problematic situation (as in MI), but other times it will represent abstract concepts of importance to managerial work (Cowan, 2007), the managers self-understanding (Wicks & Rippin, 2010), the organisation's strategy (Darsø, 2004; Heracleous & Jacobs, 2008), or the organisational identity (Stefan Meisiek & Hatch, 2008). Sometimes art is used because it can create naturalistic reenactments of situations at work, including emotional and physical dimensions that can be lost in rational conversational approaches, as is the case in forum theatre (Gibb, 2004). Sometimes art

is used because it can generate new insight exactly by moving the conversation to a parallel universe that does *not* reflect the work life naturalistically. For example, when leadership is explored through leading and following in dance (Springborg & Sutherland, 2014). Sometimes, part of the ABMs is a facilitated reflection aiming at extracting learning from the experience and translating it into something applicable in the work context. Sometimes there is no such facilitated translation, and there is a belief that the experience impacts work life on its own (Romanowska et al., 2011).

All of these different ways of using art in learning interventions are likely to enable different kinds of experiences, and these experiences are likely to have different kinds of impacts on how managers perceive and act. Future research could explore these different ABMs

It is important here to mention that it is not easy to predict how having a particular experience affects how managers perceive and engage with work situations. I cannot imagine that I could have predicted that experiencing creating metaphors would have enabled import of behaviour, or even that focusing on sensory experience would have enabled a more non-judgmental perception of self and others. Even if these effects seem almost obvious once they are formulated. Thus, I believe that empirical research is a necessary part of answering the above questions.

7.4.3. Refining MI

Whereas 80% of the participants in the AI groups experienced removal of judgments, only 45% of the participants in the MI groups experienced import of behaviour. In the analysis, I found that those who experienced import of behaviour created new complex metaphors based on *different* primary metaphors. As mentioned in section 5.4.6, future research could explore whether a version of MI, specifically designed to generate new complex metaphors based on *different* primary metaphors, would increase the likelihood of participants importing new behaviour.

7.4.4. Artists' complex and primary metaphors for working with art

My original intention when creating AI was to find a way to take people who were not familiar with creating art, through a process that resembled the process I, personally, go through when engaging with art creation – whether it is poetry, music, or dance. Thus, AI is modeled on my own approach to art creation. Thus, AI can be seen as embodying the metaphors I use to support and enable my particular way of engaging with art creation. It is very likely that other artists have different metaphors, which support and enable their particular ways of engaging with art

creation. Furthermore, engaging in art appreciation/contemplation may be supported by yet other metaphors.

For example, I use the primary metaphor of *receiving*, for both art creation and art appreciation. I sense an object and receive whatever this perception triggers. I also use the metaphor of *interest*. I try to find something I'm truly interested in and focus my awareness on that for an extended period of time. These metaphors are very much embedded in the way I facilitate AI and MI, and thus, participants are likely to experience how it is to engage with art-creation through these metaphors.

Future research could focus on formulating primary and complex metaphors other artists use to support and enable their own practices of art creation and art appreciation.

7.4.5. The impact of reflection and/or framing on ABMs

As mentioned in section 5.3.2, I did not find clear evidence for any specific effects of the pre-interview in combination with either AI or MI. However, reading through the material gave me a hunch that the pre-interview might frame the intervention in a way that on one hand limits its potential and on the other hand makes people feel more safe by creating a sense of understanding the purpose of the intervention. Future research could explore this hunch.

7.4.6. Other effects of AI and MI

As mentioned in section 5.7.1, AI, MI, and interviewing might have had different impacts on the participants' ability to produce richer descriptions of the problematic situation by including emotions and sensory experience in their descriptions – as claimed by authors promoting ABMs as a way of supporting reflexivity (Cunliffe, 2002; Sutherland, 2013). Similarly, the different interventions may also have had different impacts on participants' ability to challenge and develop their own perceptions through active experimentation and dialogue, rather than through theorising or through making and interpreting observations without direct dialogue. As mentioned, I did not explore these effects in detail, because the participants had different skill levels at the start of the research and the research was not set up in a way that was useful to explore the development of such skills.

However, future research could explore the impact of AI and MI on such skills.

7.5. Further discussion

Here follows a few interesting ideas that spring from the dialogue between the research and the literature, but where the evidence is more suggestive and not as thorough as the evidence for the main contributions discussed above. These relate to the personal nature of cognitive metaphors and the relationship between perception and action.

1. The personal nature of cognitive metaphors – linguistic analysis limits the research to what is sufficiently general to appear in language. This study looks at the metaphors particular to individuals. Both are limited views.
2. Participants did not distinguish sharply between perception and action. The actions were given in the perceptions of the situation. They fell out naturally from the perception.

In CMT, cognitive metaphors are 'found' through analysis of the so-called dead metaphors that are commonly used. It is suggested that everyone using expressions that embody metaphors, such as, argumentation is war and affection is warmth, have the same metaphorical way of structuring their understanding of argumentation and affection. However, two individuals may use the same verbal expressions connecting the same target and source domains. However, the target and source domains may be very different in terms of the concrete experience they evoke for each of these individuals.

For example, two different people may both operate from a metaphor that argumentation is war, but for a scholar who has never experienced war first hand, and a war veteran, this metaphor may operate very differently as the word war has been forged through very different kinds of experiences. Furthermore, the scholar and the war veteran may also have very different experience with argumentation and thus the experience that is structured may also be of a different nature. Thus, when a scholar and a war veteran say that they shoot someone else's arguments down, one could argue that they actually use two different metaphors. Similarly, an individual may have developed the metaphor affection is warmth from the affectionate moments of being held close by his mother (as suggested in CMT). However, it is reasonable to assume that a particular individual will hold the cognitive metaphor that affection is not only warmth, but that affection is a multitude of the aesthetic elements present in the moments he was held close by his mother. In other words affection is the particular feeling of warmth afforded by the individual's actual mother.

Such personal aspects of the cognitive metaphors are not visible when the metaphors are studied as common patterns in language. This is important, because it suggests that our cognition may be metaphorical in nature in the way that experience from one domain is structured in terms of experience from another (as suggested by CMT), but that the words used when formulating the cognitive metaphor may not capture the fullness and complexity of this metaphorical structuring.. For example, when studying how an individual speaks one may conclude that he uses the cognitive metaphor 'affection is warmth'. But this does not reveal the details of the reactivation in the sensory-motor centres this metaphorical connection creates, i.e. the simulation.

Gendlin (1997) touched upon this point, when he criticised CMT by stating that cognitive metaphors do not exist until they are formulated by the linguist (i.e. by Mark Johnson). Because of this Gendlin prefers to talk about that gap beyond the words – the actual experience for which no word can substitute. However, the evidence in the present research is not sufficient to argue for either Johnson's or for Gendlin's position.

Another interesting point worth mentioning is that I found that participants often did not speak separately about their perception of the problem and the possible action they could imagine. In my interview guide, I asked first about perception and next about possible actions. However, many times the actions were such an integrated part of the perception, that the second question felt rather repetitious.

The actions seemed to be given in the perception, so to speak. For example, P13 initially perceived the problem as a matter of low self-esteem among the customer service employees. Thus, the obvious action was to try in different ways to heighten the employees' self-esteem. P13 later changed her perception of the problem. She then saw it as a problem of the customer service employees being frustrated about the department manager not allowing them to make decisions they were fully competent to make. Given this new perception, the obvious action changed. P13 simply asked the department manager to stop micro-managing. Similarly, when P14 saw her role as a magician who needs to fix problems for the organisation, she tried to come up with answers and acts on her own, but when she changed her perception and saw her own role as a facilitator, she started asking questions and involving other people in the process. The possible actions were often so closely related to the perception of the problem, that it made sense to speak of perception/actions as one thing rather than two. This offers some support for the

claim in simulation theory, that the simulations used to represent phenomena have the primary function of supporting and enabling interactions with these phenomena. However, the evidence in the present research is not sufficient to support this claim.

8. Summary of main contributions

Beneath I have summarized the contributions and the literature and findings they relate to.

<table>
<tr><th colspan="3">Cognitive Metaphor Theory</th></tr>
<tr><th>Theory/literature</th><th>Findings</th><th>Contribution</th></tr>
<tr><td>Complex metaphors are based on primary/sensory metaphors

Concepts are based in simulations

Abstract concepts are more based in simulation of introspective experience

Different simulations support different interactions with same phenomenon.</td><td>Changes in primary metaphors => import of behaviour

Focus on primary metaphors => removal of judgments

Change in complex, but not primary metaphor => clarification of current perception</td><td>Generalising from these findings:

Specific types changes in the metaphors for a situation can be related to specific types of changes in perception of and interaction with this situation</td></tr>
<tr><th colspan="3">Art-based methods in management education</th></tr>
<tr><th>Theory/literature</th><th>Findings</th><th>Contribution</th></tr>
<tr><td>Traditional focus in the field: ABMs are analysed in terms of what kind of information it makes available for reflection.</td><td>Learning outcomes reflect participants' experience of the concrete learning intervention.</td><td>New focus in the field: ABMs should be analysed in terms of what experience the inclusion of art enables and how this experience may be used as a tool to structure future experiences. This focus makes it possible to distinguish ABMs form reflection and experiential learning interventions.</td></tr>
<tr><th colspan="3">Practical contribution</th></tr>
<tr><td colspan="3">It gives facilitators tools for realizing particular learning outcomes of ABMs.

• If they wish to remove judgments they can focus participants on primary metaphors
• If they wish to find radically new behaviours they can have participants create new complex metaphors based on different primary metaphors

Furthermore, it brings awareness to the impact on learning of the form of the whole of the concrete learning intervention.</td></tr>
</table>

9. Limitations and reflection

Following the suggestion of Alvesson and Sköldberg (2009), throughout the project, I took time to reflect upon the research on four levels of "contact with the empirical material, awareness of the interpretive act, clarification of political-ideological contexts, and the handling of the question of representation and authority" (Alvesson & Sköldberg, 2009, p. 263). In this chapter, I present the most important of these reflections and use them to outline the limitations of the research.

9.1. The empirical material

The first level of reflection relates to how data is constructed.

> "Where researchers make observations, talk to people, create pictures of empirical phenomena, make preliminary interpretations, and so on… We could speak of raw interpretations or interpretations close to the empirical material or low-abstract interpretations" (Alvesson & Sköldberg, 2009, pp. 272–73)

It is the level of interpretation that results in the 'raw' data. In the present study, this is primarily the process through which the interview transcriptions were constructed.

To sum up, the managers participating in the research were attracted to working with art, and the starting point for this work was self-selected problems the participants were currently involved with and invested in at their work place, which seemed unsolvable to them. This may not always be the case in management education. This limits the research's potential to make claims about ABMs in management education in general. For example, claims about how managers who are not drawn to art would react, or how ABMs would work when studying cases not drawn from own work experience.

Furthermore, the transcripts are stories told by managers in conversation with me. Thus, the way participants interpret the research situation and my repertoire of interpretations that I can make in real time during the interview, and the changing external circumstances all limit what is revealed in these stories.

Finally, formulating the problem can in itself be seen as an intervention. This leaves no group entirely without pre-interview. This puts limits on the strength of the claims about learning outcomes being particular to AI or MI.

9.1.1. Sample is pro-art

In the invitation through which I got participants, I mentioned *art-based methods*. Some participants explicitly told me that they came to challenge themselves by doing something that seemed different or even out of their comfort zone. However, it is reasonable to assume that most of the participants felt some kind of attraction to the idea of working with art. Thus the sample is probably not representative of the Danish population of managers – or even of the population of managers found on any given MBA programme at Danish business schools. One of the participants (P60) told me at the end of the research that this art-thing simply wasn't her. I assume that most managers who felt like that did not respond to the invitation.

Thus, one limit of the research may be that it does not give a picture of the ways in which participants' prejudice against art as part of leadership education, or against their own abilities relating to art-creation may prevent learning. However, I assume that the differences between the groups I explored will still reflect differences in the effects one can get from various methods.

9.1.2. Problems from own practice

The research claims to look at ABMs in management education. However, the research setup was different from most management educations, in that the participants worked on self-selected problems from *their own* practice they perceived as unsolvable. This is not normally done in business schools. In business schools, cases are usually drawn from other companies. The cases could be Harvard business cases or similar stories or they could be drawn from the teachers own case study research.

The research has not addressed the degree to which the fact that the participants were working on their own cases, cases they are emotionally and physically involved and invested in, affects the learning processes and outcomes. I cannot say how AI or MI would work if combined with generic business cases, or if used to explore abstract concepts relevant to managers, such as improvisation, leadership, motivation, etc. without situating these in a case.

However, as all participants in the research worked with problematic situations from their own practice, the differences between groups should still reflect differences in the potential outcomes of the various interventions.

9.1.3. Primary source of information is managers conversation with me

The primary source of information is managers' self-reporting through a conversation with me.

The design does allow me to check the participants' statements to some degree. However, this is not perfect. Research has shown that managers are often unaware of changes that are perceivable by their employees and even through blood samples (Romanowska et al., 2013). In the present research, at least one participant (P29) expressed at the beginning of her post-interview that nothing had changed. However, a detailed account of the last couple of times she had encountered her problem showed that a major shift had taken place – much to the surprise of P29 her-self. Thus, managers' self-reporting is not a reliable source of information about change in behaviour and even perception. Participants could be unconscious of change or (as I will explore in greater depth below) they could edit their reporting and present a good image of themselves. As mentioned above, several participants told me that the aggression that became visible in their poem was only visible because they had too little time to edit it out. It is possible that others succeeded in editing their expression to fit the self-image they wished to project.

Furthermore, the interviews are not merely self-reporting, they are self-reporting *to a particular facilitator (me)*. Thus, the participants' relationship to me, whether they trust me, and whether they like me, will have an impact on their self-reporting. It was clear to me that my report was not equally good with all participants. This may well account for some of the observed differences.

However, the difference in participants' self-awareness and honesty and the difference in report between me and the participants are likely to affect the different groups similarly. Thus, differences between groups should still reflect differences between the effects of the interventions.

9.1.4. Participants' interpretations of the research situation

It is reasonable to assume that participants would present differently depending on how they perceived the research situation.

For example, participants might interpret the research situation as a situation in which he and his current practice was evaluated. In this case, he might try to present a good image of himself and his current practice and show that he's got the situation under control. He might downplay any changes in perception and behaviour and stick to his initial story. Participants could also

interpret the research situation as a school or classroom situation. Then he might choose to try to impress me (the teacher) by showing how much they have learned. He might overemphasise the importance of their changes in behaviour and perception.

Participants might also interpret the research situation as a situation where they help a poor student finish his research. In this case they might also exaggerate changes in perception or behaviour, not to impress me, but to give me something I can use. Participants could also interpret the situation as one where they were testing whether my art-based methods could do something for them. Then they might even hide changes from me as part of testing me and my proposed method.

Thus, the way the participant interprets the research situation may have an impact on what they present. In the words of the research, the metaphor through which they perceive the research situation will support and enable certain behaviours.

9.1.5. External factors

Many factors beyond the interventions could have affected the learning outcomes. For example, participants learning on an executive master course, participants learning from their own experiments in the organisation, and unpredictable changes in the organisational situation that may change the nature of the problem to varying degrees.

I dealt with this limitation by being transparent and reporting when participants attribute observed changes in their experience of the problem, and of their possibilities of engaging with the problem to such factors. I also dealt with this limitation through assigning participants randomly to groups. Thus, external factors should affect different groups equally.

9.1.6. No group without pre-interview

Each participant defined the problem they wanted to work with. During the research, I realised that even though the problems were well known to the participants, the act of formulating them clearly in one sentence was an intervention that in some cases had a very large impact. Some participants came quickly to the one sentence formulation, while others presented the problem as a 'cloud' of unsatisfying aspects and details about conflicts. For the latter, formulating the problem in one sentence took longer, and when it occurred they often have reactions, such as, showing signs of relief, of something falling into place, their face would light up, or they would simply energetically state: 'Yes! that's it'. Participant 17 got so provoked by the clear formulation

of her problem, that she took action the same day. She kept referring back to the first interview as the most significant. I will return to this in the section on limitations. Thus, I cannot say that G2, G4, and G6 are without a pre-interview, but only that they have minimal pre-interview.

9.2. The interpretive act

The second level of interpretation relates to the hermeneutic process through which the deeper meanings of the data are formulated. There are no clear-cut distinctions between this level of interpretation and the raw interpretations related to the construction of data. Beneath, I have included the interpretations that are more directly related to the use of theoretical lenses.

In short, in the interview I directed the participants' awareness toward changes in perception and behaviour due to the theoretical lens I had chosen to use in this research. The result of the research may very well be important claims, but it is very possible that the use of other theories would have led to the formulation of other equally important claims.

Furthermore, I have interpreted changes in the stories managers produce about their problematic situation as signs of changes in metaphors, perceptions, and behaviour. The claims made in this research are dependent on (and limited by) these links.

9.2.1. Directing participants' awareness during interview and intervention

During the interviews and interventions, I interpret what participants say. As mentioned, I attempt to test these interpretations by verbalising them and asking for verification/corrections during the interviews. However, I also interpret the process by deciding what to pursue with further questions and what to leave unexplored. Through my questions and my interest, I direct the participants' awareness. What is given attention is controlled and limited by the theoretical perspective, my training as a therapist and an artist, and the limits of my imagination and ability to recognise relevance.

Due to the theoretical framework, changes in behaviour and perception of the problematic situation are given special attention. However, the interventions could have had important effects beyond changes in behaviour and perception, for example physiological changes, changes in how the managers are perceived by employees, changes in the managers' more general attitude towards life, or effects on how the managers related to each other or to me as facilitator during the intervention, or how they relate to colleagues after the intervention, etc. Thus, it is possible that the interventions had important effects that were not captured by the theoretical lens

chosen for the research. Furthermore, it is also possible that another interviewer using the same theoretical lens would have noticed changes in perception and behaviour that I missed.

Thus, the way I directed participants awareness towards what I found interesting based on the theory and my sensitivity in the interaction with the participants, limits the research to an exploration of changes in perception and behaviour that I was able to perceive in the stories told to me by participants. I believe my findings are important and I acknowledge that other theoretical lenses and other facilitators may elicit other equally important findings.

9.2.2. Other theories as starting point

Maybe the effects I see from AI, comes simply from paying attention to and basing one's statements on sensory perception (Gendlin, 1962) – as in Gendlin's focusing. But then again, maybe breaking down to the primary metaphors is what Gendlin is talking about – thus art creation can assist in focusing and anchoring understanding in sensory perception.

9.2.3. Changes in stories as signs of changes in perception and behaviour

Above, I state that changes in behaviour and perception were the focus of the research. However, these changes are constructed through my interpretation of the stories the participants tell me.

I saw changes in perception as changes in primary/complex metaphors and simulations and I operationalised these concepts in the following way:

- Primary metaphors: Sensory and motor experiences that are triggered in participants when they perceive or think of a phenomenon
- Complex metaphors: Representations of the problem in terms of any domain of experience, familiar to the participant, other than the one in which they found their problem.
- Simulations: The kind of lived experience, e.g. concrete examples, participants referred to when speaking about their problem.

I operationalised change in behaviour as:

- Behaviour: The interactions participants reported that they had already tried or that they were able to imagine on their own.

Thus, the focus of the research is changes in the stories managers use to explain their problematic situations and I assume that these changes reflect changes in the participants' perception and behaviour at the workplace.

9.2.4. Facilitated process vs. experienced process

Just because participants were in the same group, they might not go through the same learning process. I could do my best to facilitate an exploration of sensory experiences of the problematic situation and the participant could still explore complex metaphors – or spend the entire time explaining their current perception. Thus, I cannot assume that all participants in the same group have gone through the same learning process.

I met this limitation of the research by comparing participants in each group who did and did not experience the learning outcome, which seemed particular to the group.

9.2.5. Changes in metaphors

Finally, I interpreted the stories told by the participants as signs of changes in metaphors. For each participant, I used the transcriptions of the interviews to answer questions, such as, when does the metaphor for the problem change and when does it remain the same? When is a new complex metaphor based on different or the same primary metaphors? When can a metaphor be said to be primary and complex? In the above, I have been transparent about the process through which I answered such questions. In the methods section, I clarified how I operationalised the key concepts in the theory: Primary/complex metaphors, learning processes, simulations, and ways of engaging with the problem. In the analysis section, I clarified how I answered the questions in some of the difficult cases. In the following, I will reflect more in detail on what limitations the process of interpretation implies for the research.

For each participant, I made interpretations of what seemed to be the main metaphor the participants used to describe their problems and whether this stayed the same or changed. However, all participants use a multitude of metaphors and it is therefore no simple matter to interpret, which one could be seen as the main one. I did this by trying to select a metaphor that other metaphors seemed to relate to or build on. However, the very idea that it is possible to formulate one main metaphor (rather than, e.g., a net of mutually dependent metaphors) is an interpretation - but one that proved to be useful. It is possible that analysing the data as a network of metaphors without a central metaphor would have shown me something different.

For example, I claimed that P49 changed from using a metaphor of community in the management team as a matter of moving towards the same goal, to using a metaphor of community in the management team as physical contact. However, during the pre-interview, P49 did speak about how managers isolated themselves in silos. Thus, the metaphor of physical

contact was present already before the intervention. However, it was not used to support any action. It is possible that analysing the metaphors as a network would have shown that rather than *changing* the metaphor used to enable action, the learning process was about integrating such peripherally used metaphors more in the network.

Furthermore, the assessment of whether the cognitive metaphor used to describe the unsolvable nature of the problematic situation changed or not, was not always easy to make.

For example P10's problem was how to make researchers, whose first loyalty is to their research field, relate to the vision of the institute. He described this through the image of 'herding cats'. In the post-interview he had created a metaphor that was very elaborate. He saw the project as building a bridge, the institute leader as walking on the water where the bridge had not yet been constructed (oblivious of the fact that he was walking on the water) and P10's employees as walking behind him, sweeping the bridge instead of helping construct it. At first sight, it may seem like P10 changed his metaphor from seeing his work in terms of *herding cats* to seeing it in terms of *building a bridge*. This perception could be supported by P10's own excitement about the new image and the clarity he felt it brought him. P10 even expressed that the new image enabled him to know what to do in the situation, namely, on the one hand to tell the employees to help build the bridge instead of sweeping the part that had already been built, and on the other hand to pull the institute leader back to where the construction was happening. However, P10 spoke about both *herding cats* and *bridge building* with a sense that everyone is running around doing their own thing, and he is the only one keeping everything together. If this is the cognitive metaphor P10 used, then nothing had changed.

Just like with the metaphors, any statement about whether participants' behaviour before and after remained the same or changed is an interpretation. Since behaviour and metaphor guiding the behaviour are so close, most of the problems are parallel to the discussion of metaphors above, and I will not repeat the arguments here.

9.3. Ideology and politics

The third level of reflection is based on a critical exploration of the degree to which the constructed data and the researcher's interpretations of deeper meanings of this data are influenced by ideologies, power structures, and the processes of social reproduction.

> "To thoroughly scrutinise the less obvious consequences of a particular societal institution – rather than accept it at face value and reproduce it in research as something natural and given – is an important ingredient in a critical interpretation" (Alvesson & Sköldberg, 2009, p. 293)

9.3.1. The manager as the hero

The majority of the participants presented themselves, to greater or lesser degree, as acting in the interest of the organisation, the stakeholders, the employees, or the customers, whereas they presented others in the organisation as acting selfishly. Very few presented their own motives as based on personal (selfish) reasons. This might reflect a general tendency to see managers as heroes and, thus, for managers to interpret themselves as unselfishly fighting for the good cause against the dark forces of stupidity, laziness, and selfish opportunism.

P41 stood out as the only participant who presented a problem that was mainly concerned with his own interests. As mentioned, P41 wanted to create a position for himself that he would really enjoy and he wanted to make sure that the organisation would keep paying him for doing this. His primary, declared goal was to make sure that he would have a position that suited him. Interestingly enough, P41also stood out as one of the very few participants who did not describe a problem as something that was wrong with someone else. There were no villains in P41's story. He did not cast himself as hero and did not seem to need an arch nemesis either.

Thus, it seems that the ideology of the manager as a hero fighting the dark forces has a big influence on how managers formulate and describe problematic situations. However, this research is about how ABMs meet the problematic situations as the managers themselves construct these. Therefore, I do not see the possible influence of this ideology as a problem for this particular research. Rather, it seems to be part of what may be changed by ABMs.

9.3.2. Art as the hero

In the literature on ABMs in management education (or even in organisations in general) there is a pronounced optimism about the value of these interventions. Very few scholars have taken a critical look at possible dark sides of ABMs (Stefan Meisiek & Barry, 2014b). This stance can be seen as part of an attempt to create a powerbase for the research field by fiercely arguing ABMs value. The present research is no exception from this trend. Throughout, I have framed the research as a formulation of that unique and highly beneficial contribution that is exclusively achievable through ABMs – reproducing the view of art as the hero.

This ideological stance limits the research in that it may obscure any negative or even harmful consequences ABMs might have. The learning journeys described are profound and rarely occur without a certain level of anxiety. My training as a therapist has given me tools to detect and manage levels of anxiety so that it does not exceed what the participants can handle. However, a study of anxiety induced by ABMs may be appropriate. For example, P60 plainly stated that art was not her and that the whole research process had been a waste of time. I perceived these claims as a clear defense against anxiety brought up by the questions asked during the AI process. This suspicion was supported when P60 told me that she experienced a hot flush during the AI process. Due to this perception, I agreed with P60 that AI is not for everyone and I did not challenge her point of view on the matter in any way. We had a giggle about the whole thing and she seemed fine when she left the post-interview.

Thus, the framing of art as the hero, limits the research by focusing it on positive effects.

9.3.3. Facilitator vs. researcher

In the research, I acted both as researcher and facilitator. This meant that I on several occasions had to choose to follow the designed process instead of following my instinct as a facilitator.

For example, P21 problem was to obtain approval from his CEO for an IT investment. In the post-interview, he mentioned that the CEO had told him that 'whenever you are here, I have to think too much'. This made it clear to me that he usually tried to convince the CEO by trying to make him understand everything that P21 himself understood about the situation so the CEO would come to the same conclusions P21 had come to. As a facilitator, I would have drawn out this strategy and questioned whether the CEO needed to understand the full situation to make the decision. As a researcher, however, I had to register what the work with the artistic media had brought the participant.

It was difficult for me to reconcile these two roles. However, the conflict made my own perception of the roles clear. My view of the facilitator is connected to the humanistic tradition. I see the facilitator as someone who helps others construct a view of self, the world, and others, which allows them to unfold their potential, i.e. live the life they wish to live, and to do so more easily and with less unnecessary pain. In contrast, I saw the researcher as someone who needed to learn from others how they construct their world – even if I'm convinced that this way of constructing their world creates unnecessary pain.

This clash between my two roles made me less active in directing participants' awareness toward low hanging insights – as I would normally do as a facilitator. This may have limited the research in making the potential of the methods appear less than they would be in the hands of a trained facilitator. Furthermore, it reproduces the idea of interventions as methods that can somehow exist, independent of the facilitator. This distinction can be questioned.

9.4. Representation and authority

The fourth level of reflection relates to deconstructing the researcher's own text to highlight ambiguity, incoherence, and problems of authority and representation.

9.4.1. The voice of the participants in the thesis

In the present thesis, I have used relatively short quotes to support the story I tell. I have not brought any long interview excerpts through which the participants could speak for themselves. The participants' voices are represented in a form that has been modified through the process of the interview (as discussed above), transcribed, translated from Danish to English, and presented selectively within the frame of my overall story. Thus, the text represents a story that I was able to perceive within a large amount of data. The dominating voice in the thesis is mine.

I did invite the participants to comment on my story as I developed it, by inviting them to a number of presentations. However, it was not formally part of the research and only10 of the participants came to these presentations.

The data was rich, both in terms of interview hours and in terms of the complexity of each individual participant's learning process. Presenting a substantial part of the transcribed interviews would not have been possible (or even helpful).

9.4.2. The researcher's perspective as privileged

The participants were invited to reflect upon and make claims about how their own perception and behaviour did or did not change over the course of the research. They were also invited to reflect upon and make claims about what might have caused any given change. However, they were not invited to reflect upon and make claims about the core issues of the research, namely changes in primary and secondary metaphors or in simulations they used to see their problematic situations through; and differences between changes in the different groups. Only the research (I) had the privileged knowledge necessary to reflect upon and make claims about this.

In this way, the research text reproduces the concept of the researcher as 'above' the research participants. An idea that has been challenged by proponents for action research (Reason & Bradbury, 2001).

9.4.3. The metaphor for learning created in this thesis

The whole thesis can be seen as a construction of a particular metaphor that supports and enables a particular way of engaging with the phenomenon of learning. In this way, in creating this thesis, I have engaged in a process similar to the one the participants engaged in.

The above contributions to CMT offer a theory for ABMs, in that they offer a particular metaphor for what learning is. They also offer a frame for future research of ABMs. Instead of defining ABMs through the kind of learning outcomes or even learning processes they seem to facilitate, one could focus the research on formulating the kind of metaphors artists have for learning, that supports the way they interact with the art-based media in the process of art creation – rather than imposing the metaphor for learning, taken from reflection or experiential learning onto the art creation process. In the following, I will clarify these two points.

A learning intervention can be seen as a way of engaging with the phenomenon of learning. In the literature review I briefly mentioned four major categories of learning theories; behaviourist, cognitivist, constructivist, and humanist. Each theory can be seen as a perception, based on a particular metaphor that supports and enables certain ways to engage with the phenomenon of learning. For example, behaviourists see learning in terms of stimulus and response (the metaphor), which makes them engage with learning through construction of reward/punishment schemes. Cognitivists see learning in terms of downloading information (the metaphor), which makes them engage with learning through using multiple input channels to speed up the download and test whether the download has taken place by asking learners to reproduce the information. Constructivists see learning in terms of a process where the learner constructs inner representations of the world (the metaphor), which makes them engage with learning by creating experiences which may challenge current inner models and therefore force the learner to rebuild new, 'better', or more nuanced inner models. Humanists see learning in terms of a self-actualisation process (the metaphor), which makes them engage with learning by using it to seek growth and personal satisfaction for the learner.

As mentioned in the literature review, ABMs can be seen as a constructivist learning intervention. However, ABMs do not simply aim at constructing new inner models (constructivism's metaphor

for learning), but rather at creating new building blocks that can be used to build models of anything. Rather than constructing a particular model of a particular phenomenon, in ABMs the learner is creating the raw material for *any* future construction process. And these building blocks are made out of part of the concrete experience of the learning intervention.

10. Reflection on the Ph.D. process

Going through the Ph.D. process has taught me far more than I could possibly list here. Therefore what follows is my current top six of favourite insights:

1. How to communicate the abstract through the specific
2. The importance of the totality of the learning experience
3. Perceiving the research process as art-creation
4. Being transparent instead of defending
5. Levels of reflection
6. How concepts create perceptions at a sensory level

How to communicate the abstract through the specific: I have a very well developed ability to see connections across categories of life, subjects, theories, etc. Before the Ph.D., I often found myself in the frustrating situation, where I tried to communicate an abstract pattern by listing all the places in which I could see this pattern. I did so, because patterns often become visible to me through such comparisons across boundaries. However, through the research process, I found that a good concrete example seems to be a far better tool for communicating something that may reach far beyond this example. It offers a solid sensory ground for developing the ability to spot the abstract patterns. Thus, I believe the present research can communicate something very general about teaching and learning, precisely because it is a thorough exploration of a very particular type of learning interventions in a very particular context. Throughout the text, I have tried to always couple abstract ideas with good concrete examples.

The importance of the totality of the learning experience: Even before the Ph.D. process I knew that the facilitators' presence was important in any learning situation. The proposal put forward by Gregory Bateson that learning to learn is a matter of internalising the whole of the learning context has always matched my own experience as a teacher. However, this point has found a new ground in the theories of embodied cognition. This has changed my teaching in two ways. First, I try to teach everything through creating exercises that offer relevant sensory experiences illustrating my points. In short, I try to say everything I want to say through sensory experiences – not merely through words. Second, I try to have an approach to teaching that matches what I teach. For example, when I teach dancers to develop sensitivity to the moment in their improvised dance, I improvise my teaching based on a constant attention to the moment. If I teach dancers to not have fixed ideas about how to move, that results in 'forcing' the dance, I try

to refrain from having fixed ideas about the lesson that will force something on to the movement of the lesson. I believe that my attitude towards teaching is part of what I teach.

Perceiving the research process as art-creation: Writing a paper or a thesis was difficult for me until I started thinking about it as creating a work of art in a genre with very specific formal traditions. This metaphor made the skills I have developed in art creation available within the context of carrying out and writing up research. In other words, this metaphor allowed me to import behaviour.

Being transparent instead of defending: While writing up my analysis, I realised that instead of defending the correctness of what I had done, I could simply clearly state the rules, I had chosen to follow. This allows the reader to agree or disagree with me, but it also takes away the idea that I should defend why this is the correct way of doing it. The exercise of formulating the rules I had followed, also made it clear to me that I did, in fact, follow certain rules, and that these could be formulated. It was an exercise in making explicit the ways in which I made judgments about the various learning journeys.

Levels of reflexivity: I immensely enjoy the broad spectrum of reflexivity I have been introduced to through the Ph.D. work; from methods for critical evaluation of data collection methods to various forms of hermeneutics to Critical Theory or postmodern approaches, such as, deconstruction. I find that the Ph.D. process has broadened the number of perspectives have at my disposal in any situation, offering a richness and complexity that is in itself enjoyable. Just like the flexibility of the body is pleasurable, so is the flexibility of the mind.

How concepts create perceptions at a sensory level: In many spiritual traditions, it is claimed that we are the creators – that each individual creates the world they live in. This statement has got a very concrete meaning

11. Conclusion

In conclusion, in the above research I have proposed novel ideas, which contributes to Cognitive Metaphor Theory and to both practice and theory in the field of art-based methods in management education. These ideas are grounded in the embodied view of cognition. They indicate a new approach to researching art-based methods in management education, which involves analysing these methods in terms of what kind of experience the inclusion of art in learning intervention allows, and in terms of how having had such experiences may impact participants perceptions and actions.

12. Appendices

12.1. Invitation to managers

Invitation to participate in research project at CBS about art-based methods in managerial development

Art-based methods are increasingly used in manager education worldwide. The reason for this is that these methods can give managers insight into their daily management practice that rational analysis often cannot create as efficiently.

Purpose of the project: The purpose of the project is to compare the effects of using two different art-based methods and one conversation-based method to 'reflect' on and create insight into problematic situations at the work place.

Demands for participation: You can participate if you are currently working as a manager and have at least a few years of experience.

What do you get from participating? As a participant in this project, you will get the opportunity to work with a situation of your own choice that you find difficult in your current work life. Through this work you can find more efficient and satisfying ways of dealing with this situation. The work is done through individual interviews and through workshops with 5 participants. This makes it possible to work very specifically with each participant's situation.

How much time will you use? You will spend 2-7 hours distributed on 2-3 days during April and May 2013. How much time you will need to spend depends on which group you will be placed in when you sign up.

Facilitator: All workshops and interviews are facilitated by Claus Springborg, PhD student at Cranfield School of Management.

Sign up and questions: You can sign up and ask questions about participation by contacting Claus Springborg on mail: claus@cocreation.dk or phone.: 0045 61670897

12.2. Interview guides

12.2.1. Pre-interview guide

- Do you remember the problem and the tagline?

- How do you experience the problem?
- How do you experience your possibilities for action?

- Two min. statement test
- Rep grid test
    - Who are the groups of people or individuals who have interests that influence or are influenced by the problematic situation?
    - What are the interests of each of these groups/individuals?
    - (Selecting random sets of interests) What is similar between two interests that are different from the third?
    - (Showing them the resulting list of dimensions) What do you find interesting/what do you feel like saying when you look at these dimensions?

- Is there anything else you wish to say?

12.2.2. Post-interview guide

- (I provide a summary of the process until now)
    - Problem sentence
    - The selected metaphor/aesthetic properties and what they found interesting when looking at pictures, drawing, and poem (G1, G2, G3, & G4)
- How have you experienced the problem in the last couple of weeks?
- Have you become aware of new possibilities for acting in relation to the problem?
- Have you noticed anything else of interest relating to the problem?

- Two min. statement test
- Rep grid test (as above)

- Three questions to rate their experience of the process
    - How do you experience the problem now?
      (1 same as before – 10 radically different)
    - How do you experience your possibilities for action?
      (1 same as before – 10 radically different or a lot more possibilities)
    - How helpful did you find the process
      (1 not at all – 10 extremely)
- Is there anything else you wish to say?

12.2.3. Example of stakeholder analysis - participant 45

Interests (pre-interview)

1. Top management
    a. Consistency (1)
    b. Be informed (2)
    c. Quality control (8)
2. Self/corporate
    a. Earn money on projects (4)
    b. Announce correct numbers regarding resources to ensure the market's confidence in the organisation (9)
3. Business unit
    a. Improve image through size (5)
    b. Optimism regarding own projects (6)
4. Authorities in the country where the business unit operates
    a. Development of local workforce (3)
    b. That people invest in the country/new industry (7)

Dimensions (pre-interview)

1,2 Internal/project	3 external
4,6 Best for the organisation/living the organisational values	5 Not living the organisational values
8,9 Operational	7 Bigger vision/visionary
3,9 Generate value	5 Show off
1,8 Operational	6 Visionary, entrepreneurial
4,7 Growth	2 Fake sense of security
4,7 Make things happen	2 Wish to know what happens
8,9 Do the right thing	1 Do the same thing (which doesn't need to be the right thing)
3,7 Look beyond own navel or own shop. Corporate citizenship.	6 Entrepreneur for own shop.
2,5 Process that might lead to earning money	4 Generate value
1,8,9 Typical of the organisation	3,6,7 Entrepreneurial

Interests (post-interview)

One group with three interests was added. Engaging this group as a way of dealing with the problem was part of the change that occurred for this participant.

1. Discipline heads and global chiefs
    a. Earn money (10)
    b. Quality control (11)
    c. Recruitment (12)

Dimensions (post-interview)

5,10 Commercial focus	8 Scientific focus
7,12 Growth	9 Hope
3,11 Right	4 Doesn't need to be right
5,6 Branding/surface	11 Substance
7,8 Entrepreneurial	10 Business
3,12 Humans	4 Money
11,12 Prerequisites	10 Result

12.3. Coding tables

Beneath are tables that summarise the learning outcomes and changes in metaphorical structure for each participant sorted in groups.

G1	Effects of change in structure				Metaphors used before and after AI				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
11	1	1	1	1		1			
29				1	1				
37				1	1	1			
39	1			1	1	1			
45	1	1	1		1	1			
58	1			1	1	1			
59	1		1		1	1			
21	1								1
24	1								1
60									1

G2	Effects of change in structure				Metaphors used before and after AI				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
8	1		1	1	1	1			
12	1	1			1	1			
19		1			1	1			
28	1		1				1		
31	1			1	1	1			
34	1		1		1	1			
43			1	1	1	1			
44			1		1	1			
50	1		1				1		
38	1							1	

G3	Learning outcomes				Metaphors used before and after MI				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
13	1	1	1		1	1			
15	1	1		1	1	1			
27		1					1		
49		1				1			
6	1								1
17	1							1	
25							1		
30	1							1	
48	1						1		
54								1	

G4	Learning outcomes				Metaphors used before and after MI				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
4	1	1	1			1			
14	1	1				1			
20	1	1	1	1	1	1			
46	1	1		1	1	1			
55	1	1				1			
7	1							1	
23	1							1	
33	1							1	
47	1								1
53	1							1	

G5	Effects of change in structure				Metaphors used before and after pause				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
18	1		1						1
26	1	1				1			
41	1	1				1			
1									1
3	1								1
32	1							1	
35	1					1			
40	1								1
51	1							1	
56									1

G6	Effects of change in structure				Metaphors used before and after pause				
P	Increased clarity	Importing behaviour	Removing negative judgments on others' behaviour	Removing negative judgments on own emotions	Increased focus on primary metaphor	complex metaphor based on different primary metaphor	Not clear	complex metaphor based on same primary metaphor	Same complex metaphor
2	1								1
5	1								1
9	1								1
10	1							1	
16	1								1
22	1								1
36									1
42	1								1
52	1							1	
57	1								1

12.4. Example of learning journey summary (P49)

Problem How can we get a commitment to decisions in the leader group, given that there are members with very different ideas about what leadership is (control vs. delegation)?

Pre-interivew learning She sees the sources of the problem is 1) lack of communication as part of a power struggle and 2) that the organisation is divided in silos and everyone thinks of their own department before the whole (21 0.00). She also sees that her and one other leader have fundamental differences in the way they understand leadership and that the lack of commitment to decisions may well come from the way these decisions are framed by a more fundamental understanding of what leadership is (24 0.59-1.40).

New elements found in workshop: Choose an orchestra metaphor. Made her think about her own role – when the choir doesn't sound good, she is part of what produces the bad sound (36 3.55). When there is no common commitment it also looks a bit lonely (about picture of scarf that is left on a bench). Loneliness is a new aspect of the problem she has not previously considered (36 5.24)

Changes during the break: She takes a long time to describe considerations of how she might use the methods from the workshop in her own work and on describing a situation where she was not cc'ed on a mail with information about something important. The aspects from the workshop she remembers clearly are the picture of the 'lonely' scarf (41 13.45) and the method (41 14.00). Including the perspective that the other leader might feel loneliness, has changed her mood from anger to sadness and made her try to reach out and be open to the others points of view. She tells a story about a successful reaching out and collaborating with the other leader (41 18.10). During the talk, we look at the scarf and loneliness and she sees that what she does with her employees to make them a group, may be used also to make the leader group a group (46 5.30-10.25; 47 2.39). She sees that the relationship can be built through many small successes (47 1.16-2.27)

Representations/actions in first interview: Lack of commitment to decisions => try to push for commitment

New representations/actions – if any: Lack of relationship => tries to build up relationship by getting many small successes and through the methods she uses with her employees

My empathetic perception of the process: The problem changes from 'lack of commitment to decisions' to 'lack of relationship'. This also makes it possible for her to draw on behaviour from a previously unrelated field of creating relationships among her employees. She removes the judgment that leader to leader has to be a purely professional relationship. Now she sees that such a relationship does not support collaboration well.

12.5. Summaries for each learning outcome

Table 8: Participants who experienced import of behaviour

Participant/ group	Applying new behaviour from previously unrelated context
P12/G2	When she develops new products she is playful. These 'strengths I have in my curiosity and richness in ideas' (32 6.26) can be used when selling her consultancy concept. 'I don't need every time to explain all possibilities and all aspects' (41 0.00).
P13/G3	She shifts from Sisyphus to friction metaphor. She realises that it is a question of teaching the manager not to micro manage (new behaviour), rather than raising the employees self worth.
P15/G3	She sees that she can be angry without 'not liking them' (41 15.11). She applies an emotional attitude from a love relationship: To allow the anger is to be engaged, it comes out of caring deeply about the employees and their wellbeing (41 16.58).
P17/G3	During the formulation of the problem she sees that it's communication-issue, not a law-issue. This enables her to act, as communication is her field. *The metaphor developed during the workshop did not enable her to import the new behaviour.*
P27/G3	She started applying play to the problem (new behaviour), instead of using problem solving. *The metaphor developed on the workshop did not enable her to import this behaviour.* It came from experiencing playfulness in during workshop.
P49/G3	Her methods for creating relationships among her employees can be used with the management team.
P4/G4	Looking at a problem using many media, as we did in the workshop, can be used in the organisation, if he thinks of his colleagues like such different media. *The metaphor developed on the workshop did not enable this change*
P14/G4	The way she plays the ball back to employees as a leader and allows them to find their own answers is useful in her role as consultant.
P20/G4	Sharing himself as a human being/be personal can be used, not only to break the ice and make people relax, but as a foundation for leadership (41 17.04; 18.27), making him visible as a person, not only as a decision maker.
P46/G4	She starts not giving her opinion, but rather listening to the employees. She sees that speaking is a way she avoids being challenged. Not speaking is a way of getting feedback. It is unclear whether she knows this behaviour from a different context.
P55/G4	Her sensibility to properties of materials, which she knows from working in her house and garden, can be applied when working with employees (42 11.32). This makes her consider competencies, not directly related to employees' profession, such as, not getting stressed over the nature of the political decisions (42 0.0.9).
P41/G5	He can use his old competences in meeting facilitation to create a new position for himself by offering these competencies in many different organisational contexts. This relieves him of creating the position by defining a specific task he offers to solve (42 6.46).

Table 9: Participants who experienced removal of judgments on others

Participant/ group	Negative judgment about others/tasks	Change in perception/behaviour
P11/G1	The employees are a united front against him who complaint too much. He encourages the group to complain less.	The employees have different opinions, but some do not voice them, which make them seem to agree. He encourages the silent employees to complain more.
P29/G1	Follow-up tasks are boring and *restrictive*	Follow-up tasks give *support* to stay with one's own values
P37/G1	The tasks are unending and long. This feels heavy.	Unending and long gives time to do things well and keeps an important focus on the agenda. This feels light.
P45/G1	The department's behaviour is stupid.	The department tries to be visionary and entrepreneurial.
P59/G1	The nurses are nagging and the situation is hopeless.	When she focuses on the energy, she no longer buys the negative story (i.e. judgment) of the employees.
P8/G2	I often prioritise short-term tasks over long-term tasks because the consequences are more up front.	Short- and long-term tasks are not in opposition. 'It can be good to make it clear and say this is my challenge, but it can also maintain an opposition that doesn't solve the problem (33 04.33)
P28/G2	Participants need to agree on a common project (it is bad if someone leaves). Politically driven projects are pop (superficial)	It is ok if some people leave (41 0.05). "One doesn't have to call it 'pop', one can also call it 'creating enthusiasm for the thing one wants" (45 5.25). Focusing on details may cause paralysis (45 3.51).
P34/G2	The conservative partners maintain a strategy that gives them power. They are blind to the negative consequences for the organisation.	I see things more black and white than they are. I use an enemy picture to prevent my understanding them make me forget to express my own view
P43/G2	Following up on whether employees meet deadlines is controlling/nagging. If I see that employees don't meet a deadline, I feel let down	Following up is not odious – it's my job. And it helps my employees to know what they should focus on. It doesn't have to be so emotional
P44/G2	Employees are incompetent and do not take responsibility Employees may judge me as bad leader, if I don't help them solve their problems.	I need to give employees freedom to take responsibility. I need to let them solve their own problems.
P50/G2	Employees only care about the newest (most exciting) development project, not about making the deliveries that justify the existence of our department	Employees both understand and care about making the deliveries.

P13/G3	Employees don't understand that they are a valuable part of the organisation. They nag due to low self-esteem.	The real issue is that the department manager micromanages. "It's a completely different issue, than what I thought it was… it is much more accessible/tangible" (41 8.51).
P27/G3	Nurses are stressed, yet they seem to be unwilling or unable to reflect on and improve the way they work.	The answer to the question: Why don't you want to reflect with me nurse? Might be in that I don't want to be related to as 'nurse' but as an individual (45 2.51).
P4/G4	Everyone only cares about themselves and not about what is best for the organisation	If I solve conflicts verbally instead of through mail, it is much easier, and others both understand and care
P20/G4	If he does not make any decisions, people will think he is not visible as a leader	People appreciate his search for understanding before making decisions. And showing up as a person can also make him visible.
P46/G4	Employees only care about their own area and do not take responsibility for the overall customer experience	She considers that employees' negativity may be valid and that she may be too quick to dismiss it as 'not taking responsibility'
P18/G5	If we decide anything for our customers (psychologically challenged), then we do not have real stakeholder inclusion	Making some decisions may be valuable as a starting point that can help our customers express what they want
P26/G5	The most talented employee (programmer) only work on what he finds interesting and have no understanding for the organisations need to deliver Once everyone has understood what the programme needs to be able to do, there is no need for further meetings	The employee is motivated by acknowledgement and this can come through communication in regular meetings about progress. Meetings is a way of keeping human connection, not just about passing on information about what needs to be done.

Table 10: Participants who experienced removal of judgments on self

Participant/ group	Negative judgment about aspects of the manager self	Change in perception/behaviour
P11/G1	Emotions have no place in a professional relationship	Awareness of own emotions in the situation may make him more present to employees – not so distant
P39/G1	Expressing own point of view will create conflict, rather than solving the problem	"I guess I should give myself much more attention in all forms of expression. Then everything is easier"
P58/G1	Expressing own frustration/anger is inappropriate for a leader	After expressing my own frustration, I have become more aware of where I am in the room
P8/G2	I'm bad at prioritising long-term tasks	I'm afraid of making wrong decisions, i.e. making decisions others are not happy with
P31/G2	Aggression is the opposite of being rational, thoughtful, understanding, containing, flexible	Expressing aggression can be clarity.
P43/G2	Following up on tasks is controlling. Conflict is being let down.	It is not odious to follow up. It is my job.
P15/G3	Being angry is disloyal towards employees.	She speaks her mind more directly. It feels like taking leadership.
P20/G4	I like to wait and listen carefully before making decisions, but employees will feel they don't know where I am and see me as lacking seriousness.	I can be present as a human being, not only through making decisions.
P46/G4	Expressing negativity is weak, uncontrolled, and signals that there is something she cannot handle	She sees that she tries to be a super woman without any negativity. This is how I stay in my comfort zone, and as long as I do this, I cannot ask employees to leave their comfort zone.
P18/G5	If I set any frames, pretending to be inclusive is fake	Setting frames might have some value in facilitating stakeholder inclusion.
P26/G5	Professionalism should not be personal	Communication can be a means to give appreciation, which motivates - not just to pass on information. He began to talk directly about his employee's disease and set up weekly meetings to keep in touch with him.

12.6. Changes in metaphors for each group

In the following six tables, I have summarised the main changes in metaphors for each participant in G1, G2, G3, & G4, and for G5 & G6, I have noted the main metaphor (which mostly stayed the same) and noted what kind of clarity the interview process brought. Participants who experienced removal of judgments (in G1 & G2), import of behaviour (in G3 & G4), or either removal of judgments or import of behaviour (in G5 & G6) are marked with grey.

Table 11: Changes in metaphors for G1

P	Concept	Old metaphor	New metaphor
P11	Group of employees	One united front against him	Individuals with individual opinions
	His own actions	Rational	Have an emotional backdrop
	The task	Looking for the hidden candy	Bringing out opinions
P21	CEO that does not understand his point	Afraid of making decisions that need to be made	SAME
P24	Employee wanting to get without giving something in return	Pal effect	SAME
	Firing employee	Irreplaceable loss	Pruning the tree (enables him to cut away what doesn't work)
P29	Follow-up tasks	Restrictive structure	Supportive structure
P37	11 packages she needs to implement	Heavy and overwhelming	Light and helpful milestones
P39	Expressing own view	Something that creates conflict (so she chooses silence)	Constructive letting people know
P45	Moving people	Glass of water. Should be possible to move with blame and arguments	Sticky mass that needs to be worked from many sides
P58	Own emotions – especially frustration	It's something inappropriate	It's her own energy and position
P59	Conflict/frustration	Stories of frustration that needs to be managed	Expression of energy that can be used for anything (including making stories of frustration)
P60	Frustration	Something that can be handled with the joy model.	SAME

Table 12: Changes in metaphors for G2

P	Concept	Old metaphor	New metaphor
8/2	Long-term planning tasks and short-term consultancy tasks	Black and white opposition. Mutually exclusive. She is bad at long-term tasks.	Two parts of one figure. Not necessarily in opposition. She is scared of long-term tasks – not bad at them.
12/2	Presenting her product	Explaining (she presents the full picture and customer needs to understand)	Tempting/inspiring. (She presents interesting part. Customer should become interested/*hooked*)
19/2	Find time for development	Need to take control	Need to let go of control (import behaviour from learning intervention)
28/2	People leaving the project	Failure	Natural selection
	Political gimmicks in project	Pop	Useful pop
31/2	Communication	Make people like her	Move people to somewhere
	Aggression	Something not likable	Clarity in communication
34/2	The people who resist her plan	Enemy picture	More nuanced. People with specific interests.
38/2	Getting trainees to do what they need to do	Explaining. Making them understand what he understands.	Same (but sees that he needs to understand them better to explain)
	Work joy	Comes from solving tasks. First we need to hunt, then we can eat	Same
43/2	Employees don't meet a deadline	Being let down	Just something to deal with. Clearer and less emotional.
	Controlling whether employees meet deadlines	Old headmaster controlling for the sake of control	It's just my job. It's expected of me. It's not odious.
	Her own power	Powerless	Moving in to the conflict room (reverse escape sign)
44/2	Employees don't lift as a team	She needs to control	She needs to play the ball back to the employees
	Community	Lifting the task as a team	Closeness
50/2	Relation to employees	He's alone with the challenge. Employees don't care or understand	Employees do care and understand. He is not alone
	Making employees finish new projects	Energy that needs to be focused	SAME

Table 13: Changes in metaphors for G3

P	Concept	Old metaphor	New metaphor
P6	Leaders	Disloyal, opposing change	Lacking authority to lead
	Problem of making the two institutions one	Resistance from leaders (magnets with same pole)	Resistance (pressure) of employees under leaders
P13	The work	Sisyphus	Friction
	Employees in customer service	Someone with low self worth	Someone who are not allowed to make decisions they are competent to make
P15	Anger	Sign of disloyalty and dislike	Sign of taking leadership and being engaged (love relationship)
P17	The task	Law (she cannot write it)	Communication (she can write it)
	The process	Too political/frustrating	**Same:** Getting the guy at the disco/frustrating
	Taking space/acting	Stepping on someone's toes	**Same:** She rebels against this, showing the metaphor is still in place
P25	Her own role	Employee engaged in professional discourse	One who sets the frames
		Mother	Non-personal
	The task	Signal that all employees are equal	Knowing what who should let go of – including her self
P27	Problem	Something to fix	Something to play with
	Cause of resistance in nurses	Inability to reflect. Takes lack of competence personally	Resistance to being treated as a category 'nurse' rather than an individual person
	Possible solution	Keep conversations professional	Make conversations more personal
P30	Own role	Clarify what the organisation can do?	Clarify what she can do herself?
	The task	Make a big ship (an organisation with many traditions) move in one direction	Collection and dispersal *Same*
P48	Employees	Group	Individuals
P49	Problem	No loyalty in leader team	No relationships in leader team
P54	Task	Using rules vs. developing maturity in group to make them take responsibility	Clear path vs. exploration without a clear path (same)

Table 14: Changes in metaphors for G4

P	Concept	Old metaphor	New metaphor
P4	Colleagues he has conflict with	Egocentric enemies	Sources of information (like poems, photos, drawings)
P7	Others' (employees and general public) perception of her	She will be judged as the monster who carry out immoral tasks	SAME
	Relation between boss and employee	Everyone is set on a path by others – and has no choice	SAME
	Task	Operational problem	Relational problem. Makes her realise why the problem affects her so much
P14	Consultant	Magician	Leader
P20	Visible leadership	Decisions	Being present as human with values
	Decisions vs. listening	Heavy and unmovable vs. Light and unserious – mutually exclusive	Heavy inside helps him not get carried away in quick answers. Light outside.
P23	Relationship to boss	Boss sabotages his work	SAME Dam blocks flow of water
P33	Product development vs. stability	Employees living in the past and not following the market	SAME Sitting in a waiting hall letting the trains pass – what are we waiting for?
	Stability	Consideration for employee	Misunderstood consideration
P46	Saying: "shit"	Frustration/anger is weak and a sign that there is something she cannot handle	Power
	Getting out of comfort zone	Employees are sitting in a sugar death trap	She is her-self sitting in a sugar death trap. Being open towards other POW can be challenge her out of comfort zone
P47	Managing employees	Employees are safe, lazy, and slow. Need to be pushed/motivated	SAME push the right buttons to motivate employees
P53	Current management structure	Dilemma between doing what is rational and not stepping on people	SAME Too many chefs in the kitchen
P55	Employees	Competence profiles	Material with many properties
	Competencies	Education	Life situation

Table 15: Changes in metaphors for G5.

P	Metaphor/structure	Concept	Clarity
P1	He needs to make the task meaningful to doctors	Making doctors take tests for accreditation	New people: management
P3	Needs to explain his view	Make employees accept the 'new reality'	Pursuing current action
P18	False idealism. Own voice is inevitably manipulating	Inclusion	Partial removal of judgment on own voice
P26	'or else…' -> appreciation through communication	Motivation	Consequences of the structure he imposes??
P32	Straightjacket (metaphor is kept, but the sense that someone does it against her goes)	Her own position and possibilities for action	Situation hopeless => leave company
P35	Management have no understanding -> management is mature and interested in helping	Relationship to management	No reason to worry
P40	Administrative logic hiding real motivations (vs.	Management motives	Better arguments: from values rather than economy
P41	Something he needs to figure out -> something he can test	Certainty of new position	Consequences of the structure he imposes??
P51	Selling: Persuading people to take action	Making innovation stick	Address personal agendas
P56	Negative emotions are contagious and should be kept to one self	Negative emotions (frustration)	New ways of arguing (as entrepreneurial action)

Table 16: Changes in metaphors for G6

P	Concept/challenge	Metaphor/structure	Clarity
P2	Make consultants stay in consultancy house	Purely rational decision pros and cons	Unsolvable
P5	Enabling employees to switch work logic every other week	Reprogramming from public management to new public governance	Already very clear
P9	Getting employees to take responsibility for whole – not just own part	Employees needs to be fixed	Employees thought process was finished (another thing that needs to be fixed)
P10	Facilitating collaboration	Herding cats and building bridges. In both cases he is the only one holding it all together	He sees that his boss and him does not share a vision
P16	Controls are not done	Lack of common understanding. Goal needs to be made visible.	She needs to talk to employees – not just managers
P22	Task of building up confidence in team	Battle against negative storytelling	No reason to worry
P36	Collaboration with colleague	Sibling rivalry	No increase in clarity
P42	Collaboration	Deception. Pretending to cooperate while using stories to win territory	She practices her argumentation and takes it to a concrete, personal level, rather than organisational
P52	Make employees work more efficiently	Persuade them to work his way	Selling his point using benefits for employees is better than benefits for customers. Maybe employees disagree?
P57	Making artists create curriculums	Conflict between artist logic (100% freedom) and educational logic (curriculum and ILO)	She needs to talk to the artists who work as guest teachers – not just her management team

12.7. Overview of literature, findings, & contributions

<table>
<tr><th colspan="3">Cognitive Metaphor Theory</th></tr>
<tr><th>Theory/literature</th><th>Findings</th><th>Contribution</th></tr>
<tr><td>Complex metaphors are based on primary/sensory metaphors

Concepts are based in simulations

Abstract concepts are more based in simulation of introspective experience

Different simulations support different interactions with same phenomenon.</td><td>Changes in primary metaphors => import of behaviour

Focus on primary metaphors => removal of judgments

Change in complex, but not primary metaphor => clarification of current perception</td><td>Generalising from these findings:

Specific types change in the metaphors for a situation can be related to specific types of changes in perception of and interaction with this situation</td></tr>
<tr><th colspan="3">Art-based methods in management education</th></tr>
<tr><th>Theory/literature</th><th>Findings</th><th>Contribution</th></tr>
<tr><td>Traditional focus in the field: ABMs are analysed in terms of what kind of information it makes available for reflection.</td><td>Learning outcomes reflects experience of the concrete learning intervention</td><td>New way of focusing the field: ABMs should be analysed in terms of what experience the inclusion of art enables and how this experience may be used as a tool to structure future experiences</td></tr>
<tr><th colspan="3">Practical contribution</th></tr>
<tr><td colspan="3">It gives facilitators tools for realising particular learning outcomes of ABMs.

• If they wish to remove judgments they can focus participants on primary metaphors
• If they wish to find radically new behaviours, they can have participants create new complex metaphors based on different primary metaphors

Furthermore, it brings awareness to the impact on learning of the form of the whole of the concrete learning intervention.</td></tr>
</table>

12.8. Log book

Below are a number of entries in the log book I kept during the research process. Apart from taking out participant's names and correcting spelling, I have not made any editing. Thus, some of the entries may not be completely understandable as they refer to elements known to me but not to the reader. However, they do give a good impression of my way of reflecting on themes, such as, how to facilitate the AI, MI, and interviewing processes, the conflict I experienced between my research and facilitator role, my impressions on participant's processes, the limits of my own mental capacities, and interesting observations made during the research, which pre-shadow the understanding I refined in coding categories and findings.

Some of the entries reflect the emotional states I went through during the research process. In many of the entries problems and questions are left unanswered. This does not mean that I did not engage further with these issues. I used the log book to heighten my awareness of these issues and I continued my explorations of these issues through practice infused with this heightened awareness.

4/3 First problem formulation may influence the following

After the first person had presented her problem (conflict between prioritising own here-and-now consultancy tasks vs. long-term leadership planning tasks), the others found similar problems (getting the cleaning controls done vs. taking care of acute tasks at a hospital; and taking care of reaching own goals vs. taking care of collaborating with other departments in a silo based organisation).

4/3 It is very difficult not to help people

I still feel like I'm doing something highly unethical by not helping people when I can. As soon as they tell me about their pain, my system starts working, and brings through elements that may help. But because of the research design, I cannot share this. It feels unethical. They come to me in hope of help to solve what are sometimes very painful situations – and I withhold what could help them the most.

5/3 Not solved but dissolved

One participant mentioned the problem of two others: those are Gordic knots. The will never be solved… then she added, maybe it's language: Solved. I recall that one participant from the pilot

said in her final interview: It has not been solved, but it has stopped being a problem. The paralysis has left the experience of it. Now it is just something to do.

14/3 Mind goes numb

The research design is made to ensure rigor, but I cannot hold and be engaged in 60 people's processes. Going through the data systematically and in the same way for all people numbs my mind. And since I am the ultimate instrument for generating knowledge, the research design is built in a way that overloads the instrument for knowledge creation. This is counterproductive.

15/3 Problems revisited are clearer

Two of the people I have pre-interviewed today were able to formulate their problems more clearly than last week. So even just the short formulation of the problem changes these.

15/3 Rep grid interviewing creates insights – how much should I facilitate this?

Some people directly express that the rep grid process is helpful and creates new insights. I'm in a dilemma. I want a snapshot of people's understanding – to what degree does that include surfacing their unconscious understanding? Too little surfacing results in no snapshot. Too much surfacing, results in ??

20/3 Exhausted

Yesterday I had a restful day. I went to Bruxelles for the Creative Clash Conference. I didn't sit in front of a computer screen and I didn't work a lot. I spent a lot of hours sleeping in an airplane. Today I am much more rested. The processes are much more interesting. I'm more *on* today.

21/3 Necessary to guide more in workshop one

I've noticed that I need to guide people more by checking that they keep moving their attention to the physical felt sense during the writing processes. I think this is what made the two first rounds of workshop one feel flat.

21/3 projective identification and re-evaluation of split off parts (workshop 1)

I notice that sometimes people have problems with certain character traits in themselves and in others. Maybe these traits can be re-evaluated or the positive intentions behind the traits can be understood by sensing the un-interpreted aesthetic qualities.

27/3 Problems are embedded in the categories used

For example, P18 uses the categories of ideological vs. pragmatic. The contrast between these two *is* the problem. If he could see when ideology and pragmatism is the same, the conflict might move. It's a split. The splitting may be worth exploring psychologically. Was there a split between a pragmatic and an ideological parent? Or did ideological parents complaintabout a pragmatic world? *The non ideological is split off (category 3 and 6)*

27/3 Sense based level dissolves categorically based conflicts

I have a feeling that at the sense based level of experience, the categories that the formulation of the conflict is based on dissolves. Exploring the sense based level can, therefore, lead to transcendence of conflicts – individuals may 'forget' the conflict when the categories fall away. Exploring the conflict through metaphor might give a clearer picture of the conflicting categories.

11/4 Processing cannot be reduced to a procedure

Today I did the final interview with P18. After all was done, I could feel how his judgements around pragmatism and his ideas about what giving freedom had to look like, created his conflict and I did a mini process with him. Differentiating between pragmatism as control/manipulation and as meeting others and having a voice and being there for someone else to relate to and struggle with to make ideas strong and realistic. Differentiating between inclusion as being open to others ideas about how they want to live their lives/holding a free space for people to learn and simply just not being there.

This kind of response can never be ensured by following a procedure. Processing is about voicing what comes through my space – and keep clearing that space. Even AI only works when I can catch what is interesting.

15/4 Rep grid – should I include anything other than interests as elements?

I have been in doubt whether to include something other than interests that affect the problematic situation – do interests always constitute an appropriate set of elements? Today P22 spoke about the factor that it is a small village-like community. I put it on a card even though that is not directly an interest, but he immediately commented that it points to the interest in being able to tell a good story about someone else (whether it's true or not).

22/4 The artificiality of not offering an opinion or a challenge

Today I spoke with P21. He started to see that he needed to present differently to different people. He keeps repeating: Why doesn't he understand (about the CEO). Then he comments that the CEO smiles at him, and when he asks why, the CEO says: 'Every time you are here I need to think too much'. This comment shows me a lot about how P21 is perceived and what he can do. I get the feeling that he tries to persuade by making people understand what he understands so that they see the necessity he sees. But maybe the CEO doesn't need to understand the intricacies in order to make his decision. This links well with P21's dawning understanding that the presentations need to be matched to the situation/person. But delivering this perspective would be an intervention beyond the art-based methods and, thus, not legitimate in the research design.

23/4 Receive your moment to moment experience - don't just follow an agenda

Helping people to receive parts of their experience that they reject is something I do as facilitator – in both aesthetic and metaphorical inquiry. I advised P4 to not just follow a new agenda embedded in what he discovered about the desire to not lose face, but rather accept that this impulse exists in both himself and others, and to notice how his experience of the situation changes when the 'impulse to not lose face' becomes a part of the equation.

23/4 Research design implies a one size fits all facilitation

Sometimes people need to marinate in a new energy. But then I have an interview guide that tells me to do a rep grid or ask specific questions. And I see how this takes people out of doing what they need to do – e.g. marinate.

23/4 Experiencing a group where everyone share openly without agendas has in itself an impact

However, this is equal for both metaphorical and aesthetic inquiry.

30/4 The difference between aesthetic and metaphorical inquiry

This difference seems to be the degree to which they verbalise the felt sense experience or stay with images.

30/4 Do metaphors that evoke felt sense experience work better?

Some participants create metaphors that clearly evoke specific aspects of their felt sense. P43 'tilstoppet bollesprøjte' (clogged pastry bag), P27 swimming through a mass of employee's words

that block her sight. They are recognisable because the emotion or felt sense comes through when they describe their metaphor.

6/5 Art process vs. therapy

P31 comes to a place where she realises that she uses confusion to cover up her aggression. From here there seem to be three ways: One has only the agenda of expanding perception/discovering new perceptual territory (art). Two has the purpose of bringing about healing through connecting with Being in this particular situation (spiritual therapy). Three has the purpose of adjusting behaviour into something that will support reaching self-defined goals or the therapist's idea of what is healthy (coaching).

23/4 Employees do not play ball – splitting between symbiosis and strength

P43 has an employee who does not deliver and she feel forced into choosing between becoming controlling (which she does not like) or accept the unacceptable behaviour.

P44 has employees who cannot make decisions on their own. Either she becomes the dictator telling them what to do, or they cannot get the work done.

P24 has an employee who gets a raise for taking on additional tasks. She cannot perform the tasks, but she wants to keep the raise. P24 has to choose between using his power as boss and making the relationship a non-friendly one or accepting unacceptable behaviour – which includes paying for something he is not getting.

P39 has employees who do not attend important meetings and do not give good reasons for this. She sees a choice between prying and controlling on one hand and keeping quiet and accepting something she feels is wrong on the other hand. After the process she felt that speaking up was a way of giving attention and contact as a human being and she experienced positive feedback on her actions.

P18 had users of his place who are unable to make decisions about what they want. He feels that if he makes any decisions for them, he would impose on them and that any claim of inclusion would be fake. However, he also experiences that leaving them to making their own decisions causes his own and his employees' work to be chaotic and difficult to administrate. After the process he realises making suggestions is not opposed to being receptive to the desires of the users – it is about showing up and being present for the users as a human being.

All of these processes seems to be about recognising one's own power as an energy and separating it from the negative mental judgments, such as, I control others, or fears, such as, if I use this power, then we cannot be friends.

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